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Veteran Adjustment to Civilian Life: A Research Portfolio

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Thesis Overview

This thesis follows the research portfolio format and is carried out in part fulfilment of the academic component of the Doctorate in Clinical Psychology at the University of Edinburgh. An abstract provides an overview of the entire portfolio thesis. Chapter One contains a systematic review of published research exploring the relationship between emotion regulation strategies and mental health in the veteran population. Chapter Two is an empirical study examining the influence of psychosocial factors on veteran adjustment from military to civilian life. Both chapters are prepared for submission to the journal, *Clinical Psychology & Psychotherapy*, and follow their author guidelines.

Word Count (including tables)

Systematic review = 13,879

Empirical study = 13,688

Total thesis portfolio = 27,567

Thesis Abstract

Aim: Most veterans have a successful transition to civilian life when they leave the military. However, there are some veterans who struggle to cope and adjust to the demands and challenges of civilian life. The aims of this research portfolio are: firstly to systematically review the published literature regarding the relationship between six emotion regulation strategies (acceptance, avoidance, problem-solving, reappraisal, rumination and suppression) and veteran mental health (PTSD, depression and anxiety); and secondly, to explore psychosocial factors (mental health, stigma, self-stigma, attitude towards and likelihood of help-seeking, experiential avoidance, reappraisal and suppression) that influence veteran adjustment from military to civilian life, and to determine which of these predict a poor transition.

Method: A systematic review of the literature was conducted. Strict search criteria were applied and resulted in 23 studies which met the full inclusion criteria for the

review. For the empirical study, 154 veterans across Scotland completed a set of questionnaires.

Results: The systematic review highlighted significant relationships between the emotion regulation strategies and mental health disorders in the veteran population. The strength and direction of these relationships depended on the emotion regulation strategy and the mental health condition. The empirical study found that mental health, experiential avoidance and cognitive reappraisal predicted veteran adjustment difficulty.

Discussion: There are clear links between veterans' mental health, the way veterans regulate their emotions and the degree to which they adjust to civilian life. This has implications for how veterans are supported when they leave the Armed Forces, in terms of services and health professionals being able to better understand and support their difficulties, to facilitate their re-integration into civilian life.

Chapter 1

The relationship between emotion regulation strategies and veteran mental health: A systematic review

1.1 Abstract

Aim: The aim of this systematic review was to explore the relationship between six emotion regulation strategies examined in previous meta-analyses (acceptance, avoidance, problem-solving, reappraisal, rumination and suppression) and mental health (PTSD, depression and anxiety) in the veteran population.

Method: A systematic search of electronic databases (PsycINFO; Medline; Embase; CINAHL; ASSIA and PILOTS) resulted in 2805 studies, of which 23 met the full inclusion criteria. Key information, including correlation coefficients from each included study were extracted and each study was rated in terms of its methodological quality.

Results: There was a negative relationship between veteran mental health and acceptance, reappraisal and problem-solving, and a positive relationship between veteran mental health and avoidance, rumination and suppression. The strength of these relationships depended on the emotion regulation strategy and the mental health condition.

Discussion: Implications for clinical practice and further emotion regulation research are discussed, in terms of tailoring psychological interventions to veterans who struggle to regulate their emotions and including a more representative sample of the veteran population in research, with improved emotion regulation construct definition and methodological design.

Key message:

- Veteran mental health is significantly correlated with emotion regulation strategies
- Veteran mental health symptoms decrease with the increased use of acceptance, reappraisal and problem-solving strategies.

- Veteran mental health symptoms increase with the increased use of avoidance, rumination and suppression.

Key words:
Veterans; mental health; acceptance; avoidance; problem-solving; reappraisal; rumination; suppression

1.2 Introduction

A veteran is an individual who has served for at least a day, either as a Regular or a Reservist in HM Armed Forces (Scottish Government, 2012b). Mental health problems such as post-traumatic stress disorder (PTSD), depression and anxiety are common following military deployment (Elbogen et al., 2013; Iversen et al., 2009; Milanak, Gros, Magruder, Brawman-Mintzer, & Frueh, 2013; Tanielian et al., 2008). Mental health problems can be a key issue for some veterans when transitioning from military to civilian life (Forces in Mind Trust, 2013). Although most veterans adjust well to civilian life (KCMHR, 2014), there are some groups of veterans who are particularly vulnerable to developing mental health problems when they leave the Forces. These include Reservists, combat personnel (Macmanus et al., 2014), those with pre-existing social or childhood adversities and Early Service Leavers (who left before completing 4 years of service) (KCMHR, 2014; Lord Ashcroft KCMG PC, 2014).

Returning home after deployment can be a relief but also a challenge for some veterans, as some might require psychological adjustment to this event. For example, coming to terms with both the emotional demands of the deployment and modifying the way the veteran thinks about their civilian environment can represent an emotional or cognitive task for some veterans (Adler, Zamorski, & Britt, 2011). The experience of stressful events whilst on active military duty and any premorbid factors (e.g. emotional dysregulation, prior exposure to trauma, low self-efficacy, physiological arousal, emotional reactivity, genetic background) have been suggested to increase a veteran's vulnerability to experiencing intense, emotional distress when faced with the daily demands and challenges of coping with civilian life (Tenhula et al., 2014). The transition to being home may be characterised by positive and negative emotional

states, for example, feeling happiness and appreciation at being reunited with family, but also feeling anger, frustration and lower tolerance for small complaints and an increased irritation towards those around them. The ability to express these emotions and to manage them appropriately, however, may influence the overall social adaptation, adjustment and well-being (Adler et al., 2011). Whilst suppressing their emotional response during a dangerous deployment can be an adaptive strategy for survival, once home, the veteran may have to learn how to recognise and express emotions, otherwise adjustment to civilian life may become harder in terms of re-establishing, developing and maintaining relationships, controlling emotions beyond feeling numb or anger, and developing a personal narrative that supports their identity and sense of self (Adler et al., 2011).

Emotion Regulation and Mental Health

Whilst identifying potential factors that contribute to the development of veteran mental health problems is important for improving treatments, these contributing factors are not fully understood (Borders, Rothman, & McAndrew, 2015). Emotion regulation is one such construct which is thought to be implicated in the development, maintenance and treatment of mental health problems (Bardeen, Kumpula, & Orcutt, 2013; Berking & Wupperman, 2012), including PTSD (Kashdan, Breen, & Julian, 2010; Seligowski, Lee, Bardeen, & Orcutt, 2015; Tull, Barrett, McMillan, & Roemer, 2007); depression (Campbell-Sills, Barlow, Brown, & Hofmann, 2006; Ehring, Fischer, Schnülle, Bösterling, & Tuschen-Caffier, 2008; Gross & Munoz, 1995; Rottenberg, Gross, & Gotlib, 2005) and anxiety (Cisler, Olatunji, Feldner, & Forsyth, 2010; Mennin, Heimberg, Turk, & Fresco, 2005).

Emotion regulation is defined as a conscious and non-conscious process through which an individual modifies the likelihood, duration and intensity of an emotion, in order to respond appropriately to environmental demands (Gross, 1998). Theories of emotion suggest that emotions are adaptive responses to internal or external cues that are relevant to an individual's needs, goals or concerns (Scherer, Schorr & Johnstone, 2001). However, regulation of these emotions may be required if they are too intense or poorly matched to the demands of a situation (Gross, 1998a). In a veteran context such demands may involve coping with civilian life. It is suggested that military culture encourages service members to control their emotions whilst on deployment,

and that certain emotions are considered more acceptable than others. For example, feeling numb or angry are considered more acceptable and adaptive than other emotions which might distract the service member's ability to perform effectively in critical and dangerous situations (Castro & Adler, 2011). Successful emotion regulation is associated with positive health (John & Gross, 2004), whereas difficulties in emotion regulation are associated with mental ill-health and are incorporated into models of psychopathologies (Aldao, Nolen-Hoeksema, & Schweizer, 2010). Difficulties in emotion regulation have been reported in veterans, particularly with those who have PTSD (Monson, Price, Rodriguez, Ripley, & Warner, 2004; Price, Monson, Callahan, & Rodriguez, 2006).

Emotion Regulation Strategies

A number of emotion regulation strategies has been hypothesized to be risk factors for or protective factors against developing mental health problems. A meta-analysis by Aldao (2010) examined the relationships between six emotion regulation strategies and psychopathology. These emotion regulation strategies were acceptance, avoidance, problem-solving, reappraisal, rumination and suppression. The meta-analysis found that maladaptive strategies (avoidance, rumination and suppression) were associated with more psychopathology, and adaptive strategies (acceptance, reappraisal and problem-solving) were associated with less psychopathology (Aldao et al., 2010). However, PTSD was not included in this meta-analysis. A recent meta-analysis by Seligowski et al. (2015) did examine the association between emotion regulation strategies and post-traumatic stress symptoms and found similar results to Aldao et al. (2010) with respect to the maladaptive and adaptive strategies. However, with respect to the veteran population, there is no synthesis of data examining the relationship between emotion regulation in veterans and psychopathology. Given the prevalence of mental ill-health in this population (Iversen et al., 2009) and the demand for evidence-based, veteran-specific mental health services (Scottish Government, 2012a), this systematic review will explore the relationship between psychopathology and emotion regulation in veterans, based on the emotion regulation strategies examined in recent meta-analyses (Aldao et al., 2010; Seligowski et al., 2015).

Acceptance

Acceptance, or non-judgmental acceptance, can be conceptualised as a component of mindfulness (Baer, Smith, & Allen, 2004), which is recognised as playing a role in emotion regulation (Gratz & Roemer, 2004). Acceptance refers to being accepting, non-judgmental or non-evaluative about the present moment and willing to experience a given emotion (Baer et al., 2004), allowing the reality to be as it is, rather than making efforts to change, avoid or escape it (Dimidjian & Linehan, 2003). Acceptance is an emotional regulation strategy which has been inversely associated with PTSD symptoms (Thompson & Waltz, 2010; Vujanovic, Youngwirth, Johnson, & Zvolensky, 2009). Non-judgmental acceptance is considered a more adaptive response to problematic situations, as it prevents automatic, maladaptive behaviours (Baer et al., 2004), as opposed to the individual responding with passivity or resignation (Segal, Williams, & Teasdale, 2002). Evidence suggests that using acceptance as a regulatory strategy promotes positive outcomes (Hayes, Strosahl, & Wilson, 1999), whereas the opposite has been shown to be true in mental health disorders such as anxiety (Roemer, Orsillo, & Salters-Pedneault, 2008) and panic (Tull & Roemer, 2007).

Avoidance

Experiential avoidance refers to the reluctance or inability to stay in contact with difficult inner experiences (such as unwanted thoughts, memories, emotions, urges and physical sensations) and efforts are made to avoid, escape or modify the form, frequency or context in which these experiences occur (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). It is thought to play a key role in the development and maintenance of psychopathology (Hayes, Strosahl, & Wilson, 2012). It is argued that experiential avoidance paradoxically increases the uncomfortable psychological experience (Wenzlaff & Wegner, 2000) and stops the necessary action being taken (Hayes et al., 2004), blocking the pursuit of values-based goals (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Experiential avoidance reduces an individual's ability to flexibly adapt to situational challenges and demands (Brockman et al., 2016). Greater experiential avoidance has been positively associated with depression, anxiety and PTSD severity (Bond et al., 2011; Hayes et al., 2004). For instance, not engaging in activities or relationships is a way to avoid feelings of sadness or anxiety. PTSD can be conceptualised as a disorder of experiential and emotional avoidance, since individuals with PTSD have a tendency to limit or avoid exposure to trauma-related

cues (e.g. thoughts, emotions, physical sensations) and associated emotional reactivity (Marx & Sloan, 2005; Orsillo & Batten, 2005). Evidence suggests that experiential avoidance plays a role in the development of PTSD symptoms following trauma exposure (Kashdan, Morina, & Priebe, 2009), and that it is a reliable predictor of PTSD in veterans exposed to trauma (Meyer, Morissette, Kimbrel, Kruse, & Gulliver, 2013). Avoiding thoughts or feelings about the traumatic event may be adaptive in a military occupational setting to allow the individual to remain focused on the job, maintain military performance and reduce distress in the short-term (Castro & Adler, 2011); however, the ongoing use of avoidance and also hypervigilance may actually maintain or increase the frequency of the unwanted experiences in the long-term (Kumpula, Orcutt, Bardeen, & Varkovitzky, 2011). It should be noted that experiential avoidance is not necessarily an unhelpful strategy; however, it depends on the context in which it is being used and whether it is being used rigidly rather than flexibly as a way to adjust.

Problem-solving

Problem-solving refers to the self-directed cognitive-behavioural process by which an individual makes efforts to alter a stressful situation or to manage its consequences, such as through brainstorming possible solutions or planning a course of action (Aldao et al., 2010; D'Zurilla, Nezu, & Maydeu-Olivares, 2004). This process can increase the availability of potentially effective solutions for a specific problem, and increases the probability of selecting the most effective solution (D'Zurilla & Goldfried, 1971). Problem-solving is another aspect of emotion regulation which Aldao et al. (2010) examined. As problem-solving can modify or eliminate stressors, it can have positive effects on emotions by reducing the emotional distress. However, low or poor problem-solving skills have been linked to an array of mental health conditions, including depression (D'Zurilla, Chang, Nottingham, & Faccini, 1998), anxiety (Chang, Downey, & Salata, 2004) and PTSD (Nezu, Maguth Nezu, & D'Zurilla, 2013). Nezu et al. (2013) have suggested that the degree to which an individual can effectively adapt to stressors through the use of problem-solving abilities, is related to the likelihood of psychological and emotional distress emerging. Effective problem-solving can be regarded as helping to decrease the probability that a veteran will experience clinical levels of distress and stress-related barriers to successful coping (Nezu & Nezu, 2014; Tenhula et al., 2014).

Reappraisal

According to Gross's process model of emotion regulation (Gross, 1998), cognitive reappraisal involves the individual generating non-threatening or positive interpretations of a stressful situation, so as to change their emotional response and reduce distress. This is considered to be an antecedent-focused strategy, since it is often used to alter an emotional response before it has fully unfolded (Boden et al., 2013). Evidence suggests that cognitive reappraisal is an adaptive emotion regulation strategy as it reduces unpleasant emotion, resulting in positive cognitive and physiological responses (Gross, 1998). Habitual use of cognitive reappraisal has also been associated with greater mental health (Gross & John, 2003) and lower levels of psychopathology (Werner & Gross, 2010). It is thought that individuals with PTSD may under-utilise cognitive appraisal and over-utilise expressive suppression (discussed below), which fits with the cognitive model of PTSD (Ehlers & Clark, 2000), where inaccurate, negative appraisals of a traumatic event are not updated or reappraised when new information is acquired. This can then lead to a sense of current threat and maintain the PTSD symptoms (Boden et al., 2013). Furthermore, it is thought that maladaptive appraisal processes are central to the cognitive-behavioural models of depression and anxiety disorders (Beck, 1976; Clark, 1986).

Rumination

Rumination refers to a perseverative focus on an individual's experience of an emotion, its causes and consequences (McLaughlin & Nolen-Hoeksema, 2011), without engagement in active coping or problem-solving (Nolen-Hoeksema, 1991). Rumination is another aspect of emotion regulation that has been associated with the maintenance of PTSD, depression and anxiety (Bennett & Wells, 2010; Ehring, Frank, & Ehlers, 2008; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008) and it has been proposed as a contributing factor to the development and maintenance of mental health problems in veterans (Borders et al., 2015). It is thought that rumination prolongs and intensifies the current negative emotions because it involves dwelling on negative experiences (Borders, McAndrew, Quigley, & Chandler, 2012), rather than effectively tackling problems (Borders et al., 2015). Previous research has found associations between rumination and increased emotional distress in World War II and Vietnam veterans (Kraaij & Garnefski, 2006; Silver, 1998). Borders et al. (2015) suggest that it

would be a common strategy for veterans to use, given that rumination is more likely in individuals who have experienced extreme stress or trauma (Baer, Peters, Eisenlohr-Moul, Geiger, & Sauer, 2012). Two distinct components of rumination have been proposed (Cann et al., 2011; Triplett, Tedeschi, Cann, Calhoun, & Reeve, 2012): intrusive rumination (automatic thoughts about a positive or negative experience, which are typically about the event and not necessarily inaccurate or negative (Cann et al., 2011; Triplett et al., 2012)) and deliberate rumination (intentionally thinking about the event, often in an attempt to understand the meaning, which often occurs after the individual has been able to manage the emotional stress associated with the event, which may then help with further coping and meaning-making (Triplett et al., 2012)). Although rumination can be regarded as an adaptive emotion regulation strategy as it can help a person to understand, cope and solve their problems (Papageorgiou & Wells, 2003), it has generally been considered a maladaptive strategy, as it is negatively associated with problem-solving (Hong, 2007), particularly in the context of distress, and may prevent decision-making (Ward, Lyubomirsky, Sousa, & Nolen-Hoeksema, 2003).

Suppression

Thought suppression refers to the efforts used to suppress unwanted thoughts, as well as efforts to monitor thoughts to make sure that suppression is successful (Nixon et al., 2008). Based on Gross' process model of emotion regulation (Gross, 1998a), expressive suppression involves efforts to inhibit unwanted emotions and is regarded as a response-focused strategy, as it is used to modulate an emotional response after it has developed. Expressive suppression has been associated with PTSD, depression and anxiety (Moore, Zoellner, & Mollenholt, 2008). Research suggests that, in contrast to reappraisal, suppression is a maladaptive response to stressors and is a risk factor for distress, such as depression and anxiety, and also maladaptive behaviours (for example, substance misuse (Carver, Scheier, & Weintraub, 1989)). Indeed, it has been suggested that suppression may prevent habituation to emotional stimuli, and therefore lead to an increased vulnerability to depression and anxiety (Wenzlaff & Wegner, 2000). Although the outward expression and subjective experience of emotion may be reduced in the short-term, in the long-term it is not an effective strategy in reducing emotion and physiological arousal (Gross, 1998; John & Gross, 2004). In PTSD, it is thought that using suppression to limit the expression of the intense and unpleasant

thoughts and emotions that are associated with PTSD, paradoxically increases arousal, both emotionally (Gross & Levenson, 1997) and physiologically (Wegner, Broome, & Blumberg, 1997), and also increases accessibility to the thought (Wegner, Schneider, Iii, White, & Carter, 1987; Wenzlaff & Wegner, 2000). It is suggested that the increased arousal may lead to further efforts to avoid emotions and emotion-eliciting stimuli, thereby increasing avoidance and numbing symptoms of PTSD (Litz et al., 1997; Litz, 1992). A study found that veterans at risk of PTSD were less likely to disclose emotions related to traumatic events compared to college students reporting general emotional disclosure (Hoyt et al., 2010). This has interesting implications for evidence-based treatments for PTSD (e.g. prolonged exposure) where the critical component involves the disclosure of traumatic events (Duax, Bohnert, Rauch, & Defever, 2014).

A Note on Coping

For the purposes of this systematic review, it is worth noting that in general, emotion regulation is a contested and complicated construct, which is not straight-forward to define or measure (Berking and Wupperman, 2012). According to Gratz & Roemer (2004), there is a lack of both consistent conceptualisations of emotion regulation and comprehensive measures that adequately assess its complexity. Emotion regulation and its constructs have also been related to other constructs, such as coping (Schulz & Lazarus, 2012).Whilst emotion regulation and coping have their differences, the two constructs are both self-regulatory processes that involve controlled and purposeful efforts that can change over time (Compas et al., 2014). Indeed, coping can involve attempts to regulate emotions in stressful circumstances. One could argue that regulating one's emotions is a form of coping. Coping refers to the cognitive and behavioural efforts to manage internal or external demands that are appraised as exceeding the resources of an individual (Lazarus, 1993). In general, coping processes are described as problem-focused (or approach) coping and emotion-focused (or avoidant) coping (Rodrigues & Renshaw, 2010). Problem-focused or approach coping is considered an adaptive, active coping process that aims to deal with the problem that is causing the distress (Folkman, Lazarus, Gruen, & DeLongis, 1986), encompassing a number of coping processes, including appraisal, problem-solving and acceptance. Emotion-focused or avoidant coping on the other hand, is considered to be maladaptive and involves behaviours aimed at regulating emotions after a stressful event and is

limited to escape-avoidance behaviours (Folkman, Lazarus, Gruen, et al., 1986; Moos & Schaefer, 1993). More avoidance-based coping strategies are associated with higher distress, for example, anxiety and depression (Austenfeld & Stanton, 2004). Non-avoidant coping has been linked to improved functioning following trauma (Johnsen, Eid, Laberg, & Thayer, 2002), whereas avoidant coping has been associated with increased PTSD symptoms in veterans (Benotsch et al., 2000; Fairbank, Hansen, & Fitterling, 1991; Sharkansky, King, King, Wolfe, & Erickson, 2000; Stein, Tran, Lund, Haji, Dashevsky & Baker, 2005). Studies indicate that military personnel are less likely to use adaptive coping strategies, compared to civilians (Blake, Cook, & Keane, 1992; Sharkansky et al., 2000). Whilst avoidant coping may serve an adaptive function in the military setting, when the veterans have returned home, this coping style may become maladaptive and increase their vulnerability to developing mental health problems (Romero, Riggs, & Ruggero, 2015), particularly over an extended period of time (Barlow, 2002; Holahan & Moos, 1987)

It is likely that the challenges and demands of civilian life bring about uncomfortable or distressing thoughts and feelings, which cause the veteran to use a number of regulatory strategies. Given the literature reviewed above, some of these emotion regulation strategies will be adaptive and some will be maladaptive, playing a potential role in the development, maintenance and treatment of mental health conditions. As no systematic review on emotion regulation in veterans has been carried out, this review aims to examine the relationship between the emotion regulation strategies of acceptance, avoidance, problem-solving, reappraisal, rumination and suppression defined by Aldao et al. (2010), and the mental health conditions of depression, anxiety and PTSD, in a veteran population.

1.3 Method

The systematic review was conducted following guidance outlined in the Centre for Reviews and Dissemination (Centre for Reviews and Dissemination, 2009). A protocol for the review was submitted to the PROSPERO international prospective register of systematic reviews and can be found at: https://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42016041951.

Literature Search Strategy

A systematic literature search was conducted in September 2016, using the following electronic databases: PsycINFO, Medline and Embase (using the OVID interface); CINAHL; ASSIA and PILOTS. Articles were searched for from between 1985 to 2016. The following search terms were used: (veteran* OR "ex-service personnel" OR "ex-service*" OR "former service personnel" OR "ex-military") AND ("emot* regulat*" OR "emot* dysregulat*" OR avoid* OR "experiential avoid*" OR ruminat* OR "cognitive ruminat*" OR reapprais* OR "cognitive reapprais*" OR accept* OR "nonjudgmental accept*" OR suppress* OR "expressive suppress*" OR "emotion* suppress*" OR "cognitive suppress*" OR "thought suppress*" OR "problem solv*") AND ("mental health" OR "mental ill health" OR "psychological distress" OR depress* OR anxi* OR PTSD OR "post traumatic stress*"). Reference lists of the final included articles were also manually screened.

Inclusion and Exclusion Criteria

Population

Studies were included if they involved veterans over the age of 16. The UK definition of a veteran is defined as anyone who has served in the Armed Forces for at least one day. Both male and female veterans were included, although there are typically fewer females than males in the veteran population. Studies involving veterans from any nationality were included, using the same definition.

Studies were excluded from the systematic review if they clearly involved veterans who experienced medical or physical conditions which may have influenced their mental health and emotion regulation, for example, physical disability, amputees, physical health conditions, traumatic brain injury, pain and substance misuse.

Outcomes

Studies were included if they used validated measures of specific emotion regulation, as per the emotion regulation subscales used in Aldao et al.'s (2010) meta-analysis. These subscales were: acceptance, avoidance, problem-solving, cognitive reappraisal, rumination and suppression (of thoughts and emotions), as defined in this review's introduction. Studies measuring acceptance were included if the acceptance focused

on the internal acceptance of thoughts, feelings and sensations. Avoidance studies were included if the focus was on internal avoidance, such as experiential avoidance (of thoughts, feelings, memories, physical sensations), cognitive avoidance (for example, wishful-thinking coping or distancing), emotional avoidance or escape-avoidance coping. Studies that focused on behavioural avoidance were excluded, in order to keep the emphasis on internal experiences and to prevent "contamination" from more external, behavioural constructs, such as, for example, substance misuse which could be considered a behavioural avoidance strategy and may influence mental health and ability to regulate emotions. Studies were excluded if there was no subscale measure of a specific emotion regulation or coping strategy, for example, only measuring emotion regulation in general. Studies involving coping strategies were included if they met the definition of one of the aforementioned emotion regulation strategies. For example, problem-focused or approach-based coping was categorised under problem-solving. Studies also had to include validated measures of at least one mental health condition at baseline, specifically PTSD, depression or anxiety. Studies that focused on physiological or neurobiological outcomes were excluded.

Study Design

As in Aldao et el.'s (2010) meta-analysis, studies were eligible for inclusion if they provided baseline data of the relationship between emotion regulation and the mental health conditions of interest, and reported a cross-sectional relationship through correlational analyses between these constructs, regardless of the particular aim of the study. Experimental or treatment studies were included only if a baseline correlation between the emotion regulation strategy and mental health condition was reported. Non-correlational designs or studies where the correlation coefficient was not reported and the author could not be contacted, were excluded. Qualitative, single case study designs, dissertations, theses, poster presentations and conference abstracts were also excluded. Due to limited resources for translation, only studies published in English were included.

Data Extraction

Key characteristics and data from each study were extracted and summarised into Table 1.1. The key characteristics included: author, year and country of study; characteristics of sample (population, sample size, gender and age); study design and

objective; measure of emotion regulation strategy; measure of mental health condition; statistical analysis; correlation coefficient (r) between relevant variables; and key findings regarding the relationship between emotion regulation and mental health.

Quality Assessment

There are a number of tools available to assess the methodological quality of studies (Deeks et al., 2003; Higgins & Green, 2011), and a systematic review of critical appraisal instruments identified the Downs and Black tool (Downs & Black, 1998) as being one of the most useful (Deeks et al., 2003). The validity and reliability of the Downs and Black tool was found to be reasonably high (Downs & Black, 1998) and Deeks et al. (2003), deemed it to be suitable for use in a systematic review, although it has been acknowledged that some customisation to the review question of interest may be warranted (Deeks et al., 2003; Higgins & Green, 2011). This Downs and Black tool was considered the most relevant checklist to use and was adapted to suit the aims of this review. The main adaptation involved excluding reporting criteria i.e. those concerned with how well aspects of the study were reported, with the focus on evaluating the study's methodological ability to address the review question.

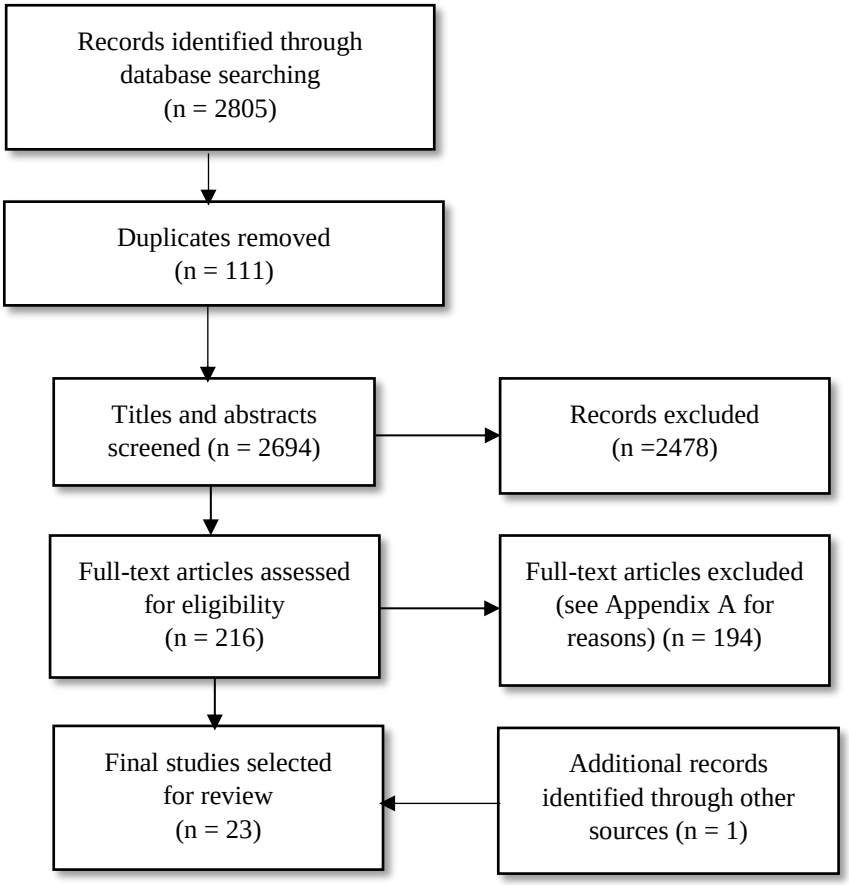
The adapted checklist therefore consisted of 7 items covering three areas (see Appendix A for more details): external validity, internal validity – bias and internal validity – confounding (selection bias). Each item was rated according to whether the paper had addressed the item appropriately, rating as either "yes" (2 points), "partial" (1 point), "no" (0 point) or "unable to determine" (0 point). A total score for each study was calculated, out of a maximum of 14 points. This quality appraisal was completed by the author. A clinical psychology doctoral student independently reviewed the quality of 26% of the studies (n = 6), producing agreement between the two raters at 98%. All items with differences between raters were discussed and amended appropriately.

1.4 Results

A total of 2805 studies were identified via the initial electronic database search. The titles and abstracts were screened and assessed for their eligibility, according to the inclusion and exclusion criteria, resulting in 216 studies. A further, detailed review of the remaining studies excluded 194 studies, the reasons for which are outlined in

Appendix B. One study was identified through screening the references of the finally included studies. A final total of 23 studies met the inclusion and exclusion criteria for the systematic review. See *figure 1.1* for details of the literature search process, based on the PRISMA reporting system for systematic reviews (Moher, Liberati, Tetzlaff & Altman, 2009).

Figure 1.1: Flow chart of literature search process



Characteristics of included studies

Details and main findings of the studies included in the review are summarised in Table 1.1. Of the 23 studies included in the review, 20 were observational studies and three were intervention studies. Of the observational studies, 18 were cross-sectional design and two were longitudinal. With regards to mental health conditions, the vast majority of studies measured PTSD (n = 22), followed by depression (n =10) and anxiety (n = 4). Five studies measured both PTSD and depression, whilst four studies measured all three of the mental health conditions relevant to this review. Some studies examined only one mental health condition, for example, 13 studies measured only

PTSD, one study measured only depression and no study measured anxiety alone. 96% of studies measured mental health through self-report outcome measures, whilst 21% of studies also used clinician-administered "gold standard" scales to measure mental health. With regards to emotion regulation strategies, avoidance was the most commonly measured strategy (16 measures taken in 13 studies), followed by problem-solving (n = 7), reappraisal (n = 4), suppression (n = 4), rumination (4 measures taken in 3 studies) and acceptance (n = 2).

Of the 23 included studies, 21 were from the USA, one study was Portuguese and one study was from The Netherlands. Of the studies that specified which theatres of war the participants had served in (n = 20), Iraq and/or Afghanistan was the most common theatre (45%), followed by Vietnam (25%), the Gulf (14%), Lebanon (4%), Portuguese Colonial War (4%), Kuwait (4%) and the Philippines (4%). In the studies that reported exposure to combat (n = 7), a mean of 82% of veterans had been exposed to combat. Participants were receiving treatment for PTSD in nine studies, seven of which were in specialist veteran residential programs. The sample size ranged from 37 to 2949 participants, with a mean size of 367. The mean age of the veterans was 41.7 years, ranging from 29.4 to 65.7 years of age. The mean prevalence of male veterans in the studies was 92%. 56% of the studies did not include female veterans, and of the studies that did (n = 12), the mean prevalence of female participants was 15%.

Quality of included studies

Table 1.2 presents the results of the methodological quality assessment for each of the included studies. The results suggest a range of variability across the quality criteria. Overall scores for each study ranged from 4/14 to 14/14, with a mean score of 8/14 , indicating a low average quality for the majority of studies. The highest scoring studies (Creech et al., 2013; Hassija, Luterek, Naragon-Gainey, Moore, & Simpson, 2012) tended to have better external validity in terms of the findings being more representative and generalizable and had adequate sample size and power, compared to the lowest scoring studies (Boden, Bonn-Miller et al., (2012); Dirkzwager et al., 2003; Kaiser et al., 2011; Rodrigues & Renshaw, 2010;).

Some aspects of methodological quality were addressed adequately. For example, most studies used appropriate statistical tests. However, some aspects of methodological quality were not particularly well-covered. For example, over half of

the studies did not adequately address validity, in terms of the representativeness of recruitment and the participants and the generalizability of findings. Nine studies were found not to have adequate sample size and power once this had been calculated, and adjustment for confounding variables was poorly covered in the majority of studies.

Table 1.1: Key characteristics of included studies

Author, Year, Country	Characteristics of sample: population, sample size, gender, age	Design/Objective	Measure of emotion regulation strategy	Measure of mental health condition	Statistical analysis	Correlation coefficient (r)	Key finding regarding emotion regulation and mental health
Blackburn & Owens (2016) USA	Veterans who served in Iraq or Afghanistan (OEF = 63%; OIF = 73%; OND = 23%; combat exposure = 100%) N = 191 Male = 86% Female = 14% Mean age = 31.49 years	Cross-sectional. Investigated the relationships among combat exposure, intrusive, and deliberate rumination, resilience, and PTSD. Participants completed an online survey.	**RUMINATION:** Event-Related Rumination Inventory (ERRI) (Intrusive rumination and deliberate rumination) (Cann et al., 2011)	**PTSD**: PTSD Checklist–Military Version (PCL–M) (Weathers, Litz, Huska & Keane, 1994)	Correlation	Intrusive rumination and PTSD = .74 Deliberate rumination and PTSD = .47 p < .01	Significant positive correlations were found between PTSD severity and intrusive rumination and deliberate rumination. Higher intrusive rumination predicted higher levels of PTSD symptom severity.
Boden et al., (2013) USA	Veteran patients receiving residential treatment for PTSD (Iraq/Afghanistan = 45%; Vietnam = 33%; Persian Gulf = 16%; combat exposure= 93%) N = 93 Male = 100% Mean age = 44.5 years	Intervention. Examined the associations between the use of expressive suppression and cognitive reappraisal and PTSD symptom severity among veterans in a residential rehabilitation program for PTSD. Participants completed questionnaires before and after treatment.	**EXPRESSIVE SUPPRESSION**: Emotion Regulation Questionnaire (ERQ) **COGNITIVE REAPPRAISAL**: Emotion Regulation Questionnaire (ERQ) (Gross & John, 2003)	**PTSD**: PTSD Checklist—Military Version (PCL-M) (Weathers et al., 1994)	Zero-order Correlation	Before treatment: Expressive suppression and: Total PTSD = .32*** Re-experiencing = .23* Avoidance = .24* Numbing = .36*** Hyperarousal = .23* Cognitive reappraisal and: Total PTSD = - .44*** Re-experiencing= - .31***	Greater use of expressive suppression was associated with higher symptom severity for PTSD total and all symptom clusters. Greater use of cognitive reappraisal was associated with

						Avoidance = - .38*** Numbing= - .41*** Hyperarousal = - .41*** *** p < .01 *p < .05	lower symptom severity for PTSD total and all symptom clusters.
Boden, Bernstein, et al., (2012) USA	Veterans with a primary diagnosis of PTSD, receiving treatment at veteran residential rehabilitation program (Vietnam = 42%; Iraq/Afghanistan = 40%; Persian Gulf = 10%; combat exposure = 91%) N = 48 Male = 98% Female = 2% Mean age = 46 years	Intervention. Tested associations between pre- to post-treatment changes in facets of mindfulness and PTSD and depression severity in residential PTSD treatment program. Questionnaires were completed before and after treatment.	**ACCEPTANCE:** Kentucky Inventory of Mindfulness Skills (KIMS) subscale - "Accept without Judgment"/mindful non-judging (Baer et al., 2004)	**PTSD**: PTSD Checklist—Military Version (PCL-M) (Weathers et al., 1994) **DEPRESSION:** Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961)	Zero order correlation	Before treatment: Acceptance and PTSD = - .50 Acceptance and depression = - .72 p < .01	Results showed significant inverse associations at treatment intake between PTSD severity and non-judgmental acceptance, and depression severity and non-judgmental acceptance.
Boden, Bonn-Miller, Kashdan, Alvarez, & Gross (2012) USA	Treatment-seeking veterans at residential rehabilitation program with primary diagnosis of PTSD (Iraq/Afghanistan = 45%; Vietnam = 36%; Persian Gulf = 12%;	Cross-sectional. Examined the interaction of emotional clarity and cognitive reappraisal in predicting PTSD symptom severity and positive affect. Participants completed questionnaires.	**COGNITIVE REAPPRAISAL:** Reappraisal subscale from the Emotion Regulation Questionnaire (ERQ) (Gross & John, 2003)	**PTSD:** PTSD Check-list – Military Version (PCL-M) (Weathers et al., 1994)	Correlation	PTSD and cognitive reappraisal = - .31 p < .01	Cognitive reappraisal was negatively associated with total PTSD symptom severity.

	combat exposure = 88%) N = 75 Male = 93% Female = 7% Mean age = 45.2 years						
Borders, McAndrew, Quigley, & Chandler (2012) USA	Treatment-seeking veterans at veteran tertiary care clinic (OEF/OIF = 90%) N = 91 Male = 87% Female = 13% Mean age = 37 years	Cross-sectional. Veterans completed measures of trait rumination, self-reported risky behaviours, symptoms of PTSD and depression.	**RUMINATION:** Rumination and Reflection Questionnaire - Rumination subscale (Trapnell & Campbell, 1999)	**PTSD:** PTSD Checklist (17-item) **DEPRESSION**: Patient Health Questionnaire (PHQ-8)	Correlation	Rumination and PTSD = 0.73 Rumination and depression = 0.61 $p < 0.001$	Greater rumination significantly correlated with PTSD symptoms and depression symptoms
(Borders et al., 2015) USA	Treatment-seeking veterans from veteran tertiary care clinic (OIF/OEF) N = 89 Male = 87% Female = 13% Mean age = 38.9 years	Cross-sectional. Explored whether rumination is a contributing factor to sleep problems and mental health symptoms. Veterans completed measures of trait rumination, sleep problems, PTSD and depressive symptoms.	**RUMINATION:** Rumination and Reflection Questionnaire - Rumination subscale (Trapnell & Campbell, 1999)	**PTSD:** PTSD Checklist (17-item) (Weathers et al., 1993) **DEPRESSION:** Patient Health Questionnaire (PHQ-8) (Kroenke et al., 2009)	Zero-order correlation	Rumination and PTSD = .72 Rumination and depression = .65 $p < .001$	Rumination was positively associated with PTSD and depressive symptoms in OIF/OEF veterans.
Brockman et al. (2016) USA	National Guard or Reserve military service members who had been deployed in	Cross-sectional. Examined whether military service members' deployment-related trauma exposure, PTSD	**EXPERIENTIAL AVOIDANCE:** Acceptance and Action	**PTSD**: Posttraumatic Stress Disorder Checklist -	Correlation	Experiential avoidance and PTSD = .69 $p < .001$	Experiential avoidance and PTSD symptoms

	OIF/OEF/OND conflicts N = 184 Male = 100% Mean age = 37.2 years	symptoms, and experiential avoidance were associated with their observed levels of positive social engagement, social withdrawal, reactivity-coercion, and distress avoidance during post-deployment family interaction. Self-reports of deployment related trauma, post-deployment PTSD symptoms, and experiential avoidance were collected.	Questionnaire-II (AAQ-II) (Bond et al., 2011)	Military Version (PCL-M) (Weathers et al., 1994)			were reliably inter-correlated.
Creech et al. (2013) USA	ODS veterans N = 2,949 Male = 93% Female = 7% Mean age = 31.6 years	Cross-sectional. Examined coping style, PTSD symptoms and family functioning measured after return from deployment and also 18–24 months after return from deployment. Participants completed questionnaires.	**PROBLEM-SOLVING:** Coping Responses Inventory measuring approach coping styles (problem solving) **COGNITIVE AVOIDANCE:** Coping Responses Inventory measuring avoidant coping styles (cognitive avoidance) (Moos, 1993)	**PTSD:** (Time 1) Mississippi Scale for Combat-Related PTSD–ODS Version (M-PTSD) (Keane, Caddell, & Taylor, 1988)	Zero order correlation	Approach coping (problem-solving) and PTSD = .10 Avoidant coping (cognitive avoidance) and PTSD = .39 p< .05	A small relationship was found between approach coping (problem-solving) and PTSD. There was a medium relationship between avoidant coping (cognitive avoidance) and PTSD.
Dirkzwager et al. (2003). The Netherlands	Dutch former peacekeeping soldiers. Peacekeepers who participated in the peacekeeping operation	Longitudinal. Examined the relationship between social support, coping strategies, additional stressful life events, and symptoms of PTSD	**PROBLEM-SOLVING:** Dutch adaptation of the Ways of Coping Questionnaire (WCQ).	**PTSD**: Self-Rating Inventory for PTSD (SRIP)	Correlation	Peacekeepers who went to Lebanon: Planful problem-solving and PTSD in 1996 = .00	More use of the coping strategies 'wishful thinking' were related to

	in Lebanon between 1979 and 1985 (N = 311), and peacekeepers who were deployed after 1990 (N = 499).	among Dutch former peacekeeping soldiers. Participants completed a questionnaire in 1996 and again in 1998. Peacekeepers who participated in peacekeeping operations in Lebanon between 1979 and 1985 were compared with peacekeepers who were deployed after 1990.	Planful problem-solving subscale **COGNITIVE AVOIDANCE:** Dutch adaptation of the Ways of Coping Questionnaire (WCQ). Wishful thinking subscale **REAPPRAISAL**: Dutch adaptation of the Ways of Coping Questionnaire (WCQ). Positive reappraisal subscale (Bramsen, Bleiker, Mattanja Triemstra, Van Rossum, & Van Der Ploeg, 1995)	(Hovens et al., 1994)		Wishful thinking and PTSD in 1996 = .43*** Positive reappraisal and PTSD in 1996 = - .10 Peacekeepers who participated in peacekeeping operations after 1990: Planful problem-solving and PTSD in 1996 = - .08 Wishful thinking and PTSD in 1996 = .42*** Positive reappraisal and PTSD in 1996 = .00 *** p < .001	more PTSD symptoms.
Duax, Bohnert, Rauch, & Defever (2014) USA	OIF/OEF veterans N = 536 Male = 90% Female = 10% Mean age = 30.38 years	Cross-sectional. Examined the associations among levels of social support, emotional hiding, and screening positive for PTSD. Participants completed a post-deployment mental health screening questionnaire.	**SUPPRESSION**: "Emotional hiding" question from 5 potential different sources of people (immediate family, family, friends, co-workers, community)	**PTSD**: Primary Care PTSD screen (PC-PTSD) (Prins et al., 2004)	Point biserial correlation coefficient ranges	Emotional hiding (suppression) and PTSD item assessing nightmares and intrusive thoughts = .38 to .54 Emotional hiding (suppression) and PTSD item assessing PTSD avoidance = .33 to .56	Emotional hiding (suppression) was significantly associated with screening positive for PTSD. Each unit increase of emotional hiding from spouses or significant others, friends, and

						Emotional hiding (suppression) and PTSD item assessing PTSD hypervigilance = .29 to .47 Emotional hiding (suppression) and PTSD item assessing numbing = .32 to .54	family was associated with a 32% to 44% increase in odds of screening positive for PTSD.
Hassija et al (2012) USA	Trauma-exposed veterans receiving outpatient mental health care at a veteran facility (combat exposure = 44%) N = 209 Male = 50% Female = 50% Mean age = 52.4 years	Cross-sectional. Evaluated the relationship between coping style, dispositional hope, and PTSD and depression symptom severity. Participants completed questionnaires.	**EMOTIONAL SUPPRESSION:** Emotional Approach Coping (EAC) - Emotional expression subscale (EAC-EE) (measures outward expressions of emotions) (Stanton, Kirk, Cameron, & Danoff-Burg, 2000) **EMOTIONAL AVOIDANCE**: Brief Cope - Avoidant emotional coping subscale (Carver, 1997)	**PTSD**: PTSD checklist - Civilian Version (PCL-C) (Weathers et al., 1993) **DEPRESSION**: Patient Health Questionniare-9 (PHQ-9) (Kroenke & Spitzer, 2002)	Bivariate correlation	Reverse correlation score to +: EAC-EE (emotional suppression) and PTSD = .32 EAC-EE (emotional suppression) and depression = .38 Emotional avoidance and PTSD = .48 Emotional avoidance and depression = .49 $p < .01$	Greater levels of emotional avoidance and lower levels of emotional expression were significantly associated with increased PTSD and depression symptom severity.

Hyer et al. (1996) USA	Vietnam combat veterans with PTSD, treatment-seeking at specialist PTSD veteran treatment centre. N = 110 Male = 100% Mean age = 38.7 years	Cross-sectional. Assessed the relative frequency of using coping strategies with war memories, and associations between relative use of these strategies and personality styles. Also examine associations between coping strategies, combat exposure and PTSD severity. Questionnaires were completed.	**AVOIDANCE:** Ways of Coping-Revised (WCQ-R). WCQ-R subscales: Distancing (cognitive avoidance) Escape-Avoidance (wishful thinking and efforts to avoid or escape the problem) **PROBLEM-SOLVING:** Ways of Coping-Revised (WCQ-R) subscale: Planful Problem-Solving **REAPPRAISAL:** Ways of Coping-Revised (WCQ-R) subscale: Positive Reappraisal (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986)	**PTSD**: Mississippi Scale for Combat-Related PTSD (Keane et al., 1988) Minnesota Multiphasic Personality Inventory MMPI-PTSD subscale (Keane, Malloy, & Fairbank, 1984)	Correlation	Distancing (cognitive avoidance) and Mississippi PTSD = - .01 Escape-avoidance and Mississippi PTSD = .25* Planful problem-solving and Mississippi PTSD = - .04 Positive reappraisal and Mississippi PTSD = - .23 (n = 68) Distancing (cognitive avoidance) and MMPI PTSD = .21 Escape-avoidance and MMPI PTSD = .36** Planful problem-solving and MMPI PTSD = - .23 Positive reappraisal and MMPI PTSD = - .35** (n = 69) *p < .05 **p < .01	Higher scores on the MMPI-PTSD scale were significantly associated with less relative use of positive reappraisal, with corresponding correlations for the Mississippi scale in a similar direction but not statistically significant. Consistent with prior findings, these veterans predominantly used emotion-focused and avoidant strategies to cope with war memories.
Kaiser et al. (2011) USA	Vietnam-era prisoners of war - naval aviators/veterans	Longitudinal. Captivity stressors and coping strategies were assessed shortly	**PROBLEM-SOLVING:**	**PTSD**: Posttraumatic	Bivariate correlation	Approach-based coping (problem-solving) and: PTSD = - .10	There were no significant findings with

	N = 69 Male = 100% Mean age = 65.7 years	after the repatriation of Vietnam-era prisoners of war. Physical and mental health were assessed almost three decades later. Participants completed questionnaires.	Solitary Confinement Questionnaire assessed approach-based coping constructs **AVOIDANCE:** Solitary Confinement Questionnaire assessed avoidance-based coping constructs (Deaton, Berg, Richlin, & Litrownik, 1977)	Stress Disorder Checklist-Civilian (PCL-C) (Weathers et al., 1993) **DEPRESSION AND ANXIETY**: Brief Symptom Inventory (BSI) (Derogatis, 1993)		Depression = - .13 Anxiety = - .12 Avoidance-based coping (avoidance) and: PTSD = - .11 Depression = - .11 Anxiety = - .09 *p< .05	regards to the relationship between approach-based coping (problem-solving) and mental health and avoidance-based coping (avoidance) and mental health.
Meyer, Morissette, Kimbrel, Kruse, & Gulliver (2013) USA	OEF/OIF trauma-exposed veterans (combat exposure = 86%) N = 106 Male = 84% Female = 16% Mean age = 37.7 years	Cross-sectional. Examined whether higher scores on the Acceptance and Action Questionnaire—II (AAQ–II), accounted for unique variance in PTSD symptoms compared with personality factors and other established predictors of PTSD. In addition, examined whether the construct measured by the AAQ–II accounts for unique variance in PTSD severity over and above the avoidance symptoms of PTSD. Participants completed self-report measures.	**EXPERIENTIAL AVOIDANCE**: Acceptance and Action Questionnaire-II (AAQ–II) (Bond et al., 2011)	**PTSD**: Clinician-Administered PTSD Scale (CAPS) (Blake et al., 1995) PTSD Checklist—Military Version (PCL–M) (Weathers et al., 1994)	Pearson product–moment correlation	Experiential avoidance and PTSD (CAPS) = .68*** Experiential avoidance and PTSD (PCL–M) = .79*** Experiential avoidance and mean PTSD = .74*** Experiential avoidance and re-experiencing mean (CAPS and PCL-M) = .64*** Experiential avoidance and avoidance & numbing mean (CAPS and PCL-M) = .70***	PTSD severity was associated with experiential avoidance.

						Experiential avoidance and hyperarousal mean (CAPS and PCL-M) = .64 *** ***p < .001	
Pinto-Gouveia et al. (2015) Portugal	Portuguese Colonial War veterans Sample 1 - General population of war Veterans N = 371 Mean age = 63.3 years Sample 2 - Different sample from the same population N = 312 Mean age = 63.4 years Sample 3 - Clinical sample with a war-related PTSD N = 42 Mean age = 64.1 years Sample 4 - Non-clinical sample without PTSD N = 44 Mean age = 64.5 years Male = 100%	Cross-sectional. Explored psychometric properties of AAQ-TS.	**EXPERIENTIAL AVOIDANCE**: Acceptance and Action Questionnaire-Trauma Specific (AAQ-TS) (personal communication in Pinto-Gouveia et al. (2015)	**PTSD**: PTSD Checklist–Military Version (PCL-M) Portuguese version (Carvalho et al., 2015) Clinician-Administered PTSD Scale (CAPS) Portuguese version (Pinho & Coimbra, 2003) **DEPRESSION**: Beck Depression Inventory (BDI) Portuguese version (Vaz Serra & Abreu, 1973)	Pearson's product-moment correlation coefficients were used to assess convergent validity with other trauma-related constructs.	Experiential avoidance and PTSD = .68 Experiential avoidance and depression = .55 Experiential avoidance and anxiety = .55 p < .001	There was a positive and significant correlation with trauma-specific experiential avoidance and PTSD, depression and anxiety. The AAQ-TS showed internal consistency, a good temporal reliability, convergent validity with psychopathological symptoms (related to PTSD, anxiety, depression and stress).

				DEPRESSION, ANXIETY, STRESS: Depression, Anxiety and Stress Scales (DASS–21) Portuguese version (Pais-Ribeiro, Honrado, & Leal, 2004)			
Plumb, Orsillo, & Luterek (2004) USA	Treatment-receiving veterans at an inpatient treatment program for PTSD N = 37 Male = 100%	Cross-sectional. Assessed the role of experiential avoiding in predicting post-trauma functioning using more diverse samples across three studies, one of which included a veteran population. Also examined the relationship between trauma severity, experiential avoidance and depression. Participants completed questionnaires.	**EXPERIENTIAL AVOIDANCE**: Acceptance and Action Questionnaire (AAQ) (Hayes et al., 2004)	**PTSD**: Clinician-Administered PTSD Scale (CAPS) (Blake et al., 1995) **DEPRESSION**: Beck Depression Inventory (BDI) (Beck et al., 1961)	Correlation	Experiential avoidance and PTSD = .32* Experiential avoidance and depression = .50** *p < .05 ** p < .01	Experiential avoidance was associated with both PTSD symptom severity and depression.
Renshaw & Kiddie (2012) USA	National Guard/Reserve service members (OEF/OIF: Iraq = 82%;	Cross-sectional. Examined PTSD symptoms, coping processes and age as simultaneous rick factors for	**AVOIDANCE:** Avoidance subscale of Ways of Coping Questionnaire -	**PTSD**: PTSD Checklist-Military Version (PCL - M)	Bivariate correlation	Avoidance and PTSD = .53*** ***p < .001	Avoidant coping and PTSD were strongly positively

	Afghanistan = 8%; other OEF/OIF area = 10%) N = 143 Male = 100% Mean age = 34.3 years	anger and aggression. Participants completed measures of anger/aggression, coping and PTSD.	Revised (WCQ - R) (Folkman, Lazarus, Dunkel-Schetter, et al., 1986)	(Weathers et al., 1994)			correlated with each other.
Rodrigues & Renshaw (2010) USA	Service members of the Utah National Guard/Reserve (Iraq = 65%; Afghanistan = 20%; Kuwait = 8%; Philippines = 6%) N = 218 Male = 100% Mean age = 35.1 years	Cross-sectional. Examined the associations between coping, combat exposure and PTSD among National Guard veterans deployed overseas since 2001.	**PROBLEM-SOLVING:** Problem-focused coping (PFC) scale of Ways of Coping Questionnaire-Revised (WCQ-R) **AVOIDANCE**: Emotion-focused coping (EFC) scale of Ways of Coping Questionnaire-Revised (WCQ-R) (Folkman, Lazarus, Dunkel-Schetter, et al., 1986) EFC and PFC subscale scores were also calculated to match those reported by Suvak et al., (2002). These authors derived 3 factors in their sample: PFC, EFC-	**PTSD**: PTSD Checklist – Military Version (PCL-M) (Weathers et al., 1994)	Bivariate correlation	PFC (sample-specific) and PTSD = − .01 EFC (sample-specific) and PTSD = .55*** PFC (Suvak et al., 2002) and PTSD = .03 EFC (Suvak et al., 2002) and PTSD = .44*** EFC-wishful thinking (Suvak et al., 2002) and PTSD = .35*** EFC-blunting (Suvak et al., 2002) and PTSD = .41*** *p < .05 **p < .01 ***p < .001.	Problem-focused coping was unrelated to PTSD symptoms. In contrast, increased levels of emotion focused coping were found in veterans who reported higher levels of combat exposure.

			wishful thinking (=cognitive avoidance), and EFC blunting (= behavioural avoidance).				
Roemer, Litz, Orsillo, & Wagner (2001) USA	Vietnam combat veterans N = 61 PTSD group = 32; mean age = 45.4 years, Well-adjusted group = 29; mean age = 48.8 years	Cross-sectional. Investigated the role of strategic withholding of emotional responses among individuals with PTSD, compared to those without PTSD. Participants completed structured diagnostic interviews and questionnaires.	**SUPPRESSION**: Strategic withholding questions - frequency and intensity	**PTSD**: Clinician Administered PTSD Scale (CAPS) (Blake et al., 1995) **DEPRESSION**: The Beck Depression Inventory (BDI) (Beck et al., 1961) **ANXIETY**: Beck Anxiety Inventory (BAI) (Beck, Epstein, Brown, & Steer, 1988)	Correlation	Strategic withholding (suppression) frequency and: PTSD = .58** Depression = .40* Anxiety = .38* Strategic withholding (suppression) intensity and: PTSD = .70** Depression = .51** Anxiety = .47** *p < .01 **p < .001	Relationships were found between strategic withholding (suppression) and mental health. Combat veterans with PTSD reported more frequent and intense withholding of their emotions (suppression) in comparison to well-adjusted combat veterans.
Romero, Riggs, & Ruggero (2015)	Military veterans who were undergraduate students (combat exposure = 72%)	Cross-sectional. Examined the contributions of coping style and family social support on symptoms of anxiety,	**AVOIDANCE:** Brief COPE - Avoidant-focused coping subscale	**PTSD**: Impact of Events Scale-Revised (IES–R)	Correlation	Avoidant coping and: PTSD = .45*** Depression = .60*** Anxiety = .61***	Avoidant coping was positively related to symptoms of

USA	N = 136 Male = 79% Female = 21% Mean age = 31.9 years	depression and PTSD a student veteran sample. Questionnaires were completed.	**PROBLEM-SOLVING**: Brief COPE - Problem-focused coping subscale (Carver, 1997)	(Weiss & Marmar, 1997) **DEPRESSION**: Patient Health Questionnaire–9 (PHQ–9) (Kroenke & Spitzer, 2002) **ANXIETY**: Generalized Anxiety Disorder–7 (GAD–7) (Spitzer, Kroenke, Williams, & Löwe, 2006)		Problem-focused coping and: PTSD = - .11 Depression = - .35*** Anxiety = - .26** ***p < .001 ** p < .01 *p < .05	anxiety, depression and PTSD. There was no direct associations between problem-focused coping and mental health.
Tenhula et al. (2014) USA	Veterans enrolled in specialist group program (OEF/OIF/OND = 56%) N = 621 Male = 83% Female = 17% Mean age = 42.2 years	Intervention Evaluated problem-solving training program for veterans. Questionnaires were completed before and after treatment.	**PROBLEM-SOLVING**: Social Problem Solving Inventory-Revised: Short Form (SPSI-R) (D'Zurilla et al., 2004)	**DEPRESSION**: Patient Health Questionnaire-9 (PHQ-9) (Kroenke & Spitzer, 2002)	Correlation	Before treatment: Total problem-solving and depression = - .47 p < .01	A significant relationship between depression and social problem-solving was found.
Tsai et al. (2012) USA	Treatment-seeking OEF/OIF veterans from veteran mental	Cross-sectional. Compared treatment-seeking OEF/OIF veterans who screened	**AVOIDANCE:** Thought Control Questionnaire (TCQ) -	**PTSD**: The PTSD Checklist–	Spearman's rho correlation	Avoidance (TCQ Worry) and PTSD = .44**	Veterans who screened positive for PTSD

	health or primary care clinics N = 164 PTSD group (n = 86) Male = 95% Female = 5% Mean age = 29.8 years Other treatment-seeking group (n = 78) Male = 97% Female = 3% Mean age = 28.9 years	positive for PTSD to other treatment-seeking veterans without PTSD on various life domains, including coping. Participants were screened for PTSD and completed a series of questionnaires that assessed social functioning, coping, and life satisfaction.	Worry subscale (avoidance) (Wells & Davies, 1994) The Cognitive-Behavioural Avoidance Scale (CBAS) - Cognitive Social and Cognitive Non-social subscales (Ottenbreit & Dobson, 2004)	Military version (PCL-M) (Weathers et al., 1994)		Avoidance (CBAS - Cognitive Social) and PTSD = .54** Avoidance (CBAS - Cognitive Non-social) and PTSD = .55** Avoidance (CBAS Total score) and PTSD = .60** **p < .01	reported higher TCQ scores on the worry (avoidance) scales and higher CBAS scores on all subscales. Veterans who screened positive for PTSD reported engaging in more cognitive-behavioural avoidance, compared to other treatment-seeking veterans without PTSD.
Wahbeh, Lu, & Oken (2011) USA	Three age and gender-matched groups of Vietnam veterans N = 45 1) Combat veterans with PTSD N = 15 Mean age = 55.9 years 2) Combat veterans without PTSD N = 15 Mean age = 51 years 3) Non-combat veterans without PTSD N = 15	Cross-sectional. The objective was to assess group differences between veterans with and without PTSD in mindful awareness and mindful non-judging.	**ACCEPTANCE**: Kentucky Inventory of Mindfulness Skills (KIMS) subscale - "Accept without Judgment"/mindful non-judging (Baer et al., 2004)	**PTSD**: Clinician-Administered PTSD Scale for DSM-IV (CAPS) (Blake et al., 1995)	Zero-order correlation	Acceptance (mindful non-judging) and: Re-experiencing = − .62* Numbing-avoiding = − .50* Hyperarousal = − .46** *p < .0005 **p < .001 N=45	Acceptance (mindful non-judging) and was negatively correlated with PTSD symptom clusters. Mindful non-judging is more highly correlated than mindful awareness to PTSD symptoms, especially re-experiencing, to

	Mean age = 54.8 years Male = 100%	combat veterans with PTSD.

Key:

OEF = Operation Enduring Freedom; OIF = Operation Iraqi Freedom; OND = Operation New Dawn; ODS = Operation Desert Storm

Table 1.2: Methodological quality assessment of studies

Quality Criteria:	Blackburn & Owens (2016)	Boden et al., (2013)	Boden, Bernstein et al., (2012)	Boden, Bonn-Miller et al., (2012)	Borders, McAndrew et al., (2012)	(Borders et al., 2015)	Brockman et al., (2016)	Creech et al., (2013)	Dirkzwager et al., (2003)	Duax et al., (2014)	Hassija et al, (2012)	Hyer et al., (1996)	Kaiser et al., (2011)	Meyer at el., (2013)	Pinto-Gouveia et al., (2015)	Plumb, Orsillo, & Luterek (2004)	Renshaw & Kiddie (2012)	Rodrigues & Renshaw (2010)	Roemer et al., (2001)	Romero, Riggs, & Ruggero (2015)	Tenhula et al., (2014)	Tsai et al., (2012)	Wahbeh, Lu, & Oken (2011)
1. **Representative population - recruitment**	0	2	0	0	2	2	0	2	0	0	2	2	0	0	0	2	0	0	0	0	2	0	0
2. **Representative population - participants**	0	2	2	0	2	2	0	2	0	0	2	2	0	0	0	2	0	0	0	0	0	0	0
3. **Generalisability of findings**	0	0	0	0	0	0	2	2	0	2	2	0	0	2	0	0	0	0	2	2	2	2	2
4. **Data dredging**	2	2	2	2	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	0	2	2
5. **Appropriate statistical tests**	1	2	2	2	1	2	1	2	2	1	2	2	2	2	2	1	2	2	1	1	1	2	2
6. **Adjustment for confounding variables**	0	0	0	0	0	0	0	0	0	2	2	0	0	2	2	0	0	0	0	2	0	2	2
7. **Sample size and power**	2	0	2	0	2	2	2	2	0	2	2	0	0	2	2	0	2	0	0	0	2	2	2
"Total Score"	**5**	**8**	**8**	**4**	**9**	**10**	**7**	**12**	**4**	**7**	**14**	**8**	**4**	**10**	**8**	**7**	**6**	**4**	**5**	**7**	**7**	**10**	**10**

Key: ER = emotion regulation; MH = mental health

The relationship between emotion regulation strategies and veteran mental health

The aim of this systematic review was to examine the relationship between emotion regulation strategies (acceptance, avoidance, problem-solving, reappraisal, rumination and suppression) used by veterans, and mental health, specifically PTSD, depression and anxiety. The following will address these relationships.

Is there a relationship between acceptance, PTSD and depression?

Two studies in this review included acceptance as an emotion regulation strategy. Boden, Bernstein et al.'s (2012) intervention study explored associations between pre- to post-treatment changes in aspects of mindfulness (including acceptance) and PTSD and depression in veterans with a primary diagnosis of PTSD who were receiving treatment at a specialist veteran residential rehabilitation program. Pre-treatment correlation coefficients were used in this review as treatment was a potential confounding factor that may have influenced PTSD and acceptance scores. Wahbeh et al.'s cross-sectional study (2011) assessed group differences between veterans with and without PTSD in mindful awareness and also mindful non-judging (acceptance). Correlation coefficients were extracted for the total sample size. Both studies revealed a significant, inverse association between PTSD severity and acceptance, with the correlation coefficient ranging from -.46 to -.62, indicating a large relationship. The same was also true for the relationship between acceptance and depression in Boden, Bernstein et al.'s (2012) study, with the correlation revealing a stronger association (-.72) between the variables. These results indicate that when veterans allowed and accepted distressing thoughts and feelings, their symptoms of PTSD and depression reduced.

The results should be considered in the context of the methodological strengths and weaknesses of these studies. The study by Wahbeh et al. (2011 had limited representativeness, in terms of the recruitment process and participants in the veteran community. The study by Boden, Bernstein et al. (2012) was also limited in terms of its external validity. For example, it was not clear whether the total source population had been recruited, and generalizability to the larger veteran population was limited as participants were receiving intensive treatment from a specialist veteran residential program. However, both studies were comparable in that they measured acceptance (allowing or being non-judgmental about the present-moment experience) through the

"accept without judgment" subscale of the KIMS, which has been shown to have excellent psychometric properties (Baer et al., 2004). They also both measured mental health through reliable and well validated outcome measures, however, Wahbeh et al. (2011) measured the symptom clusters of PTSD (re-experiencing, numbing-avoiding and hyperarousal) through the "gold-standard" clinician-administered PTSD scale, which, one could argue, is more reliable than self-report measures. Both studies are also relatively comparable in terms of the size, age, gender (majority were male) and amount of combat exposure.

Is there a relationship between avoidance and PTSD, depression and anxiety?

A total of thirteen studies examined avoidance. All thirteen studies included PTSD, whilst five studies included depression and three included anxiety. A variety of tools were used to measure avoidance; the majority focused on cognitive avoidance whilst four studies focused on experiential avoidance. All the studies that examined the relationship between experiential avoidance and total PTSD and symptom clusters found a strong, positive correlation which was statistically significant (Brockman et al., (2016), Meyer et al. (2013) and Pinto-Gouveia et al. (2015)). The relationship was somewhat weaker in Plumb et al.'s (2004) study, but still significant. However, this study had a number of methodological limitations, including poor generalisability and inadequate power and sample size. Results also found a positive, strong relationship between experiential avoidance and depression (Pinto-Gouveia et al., 2015; Plumb et al., 2004) and between anxiety (Pinto-Gouveia et al., 2015). All studies had limitations in terms of the samples not being fully representative and the findings not generalizable to the wider veteran population.

All studies measuring cognitive avoidance by the Ways of Coping Questionnaire (WCQ) found a positive relationship between avoidance and PTSD, ranging from a small to large association (Dirkzwager et al., 2003; Hyer et al., 1996; Renshaw & Kiddie, 2012; Rodrigues & Renshaw, 2010). The exception was the study by Hyer et al. (1996) in one of the avoidance subscales, which found no relationship, and was methodologically quite limited. Indeed, the methodological quality of these studies was limited, ranging from 4 to 8/14 . The two studies using the avoidant subscale of the Brief COPE both found statistically significant relationships between avoidance and PTSD and also between depression (Hassija et al., 2012; Romero et al., 2015) and

anxiety (Romero et al., 2015) which were medium and strong in strength, respectively. These two studies differed in terms of their methodological quality, with Hassija et al (2012) scoring most highly (14/14), but Romero et al (2015) having inadequate power and sample size and poor validity. All other measures of cognitive avoidance found a positive relationship between avoidance and PTSD (Creech et al., 2013; Tsai et al., 2012) and were also rated fairly highly in terms of methodological quality. However, Kaiser et al. (2011), did not find a statistically significant relationship between avoidance and PTSD, depression and anxiety. This may have been due to its poor validity, inadequate power and sample size, and little consideration of confounding variables.

Is there a relationship between problem-solving, PTSD, depression and anxiety?

Seven studies looked at problem-solving. Six of these included the relationship between PTSD, three included depression and two studies also included anxiety. Creech et al. (2013) examined coping style (including problem-solving), PTSD and family functioning in veterans after return from deployment (time 1) and 18 to 24 months later. Relevant correlation coefficients were available for time 1. Results demonstrated a significant, positive but very weak correlation between problem-solving and PTSD. In terms of methodological quality, this study was rated highly. Of particular note was its large sample size of 2,949.

Dirkzwager et al.'s (2003) longitudinal study examined the relationship between coping strategies (including problem-solving) social support, stressful life events and PTSD in former peacekeeping soldiers. Results were compared between those who participated in operations in Lebanon between 1979 and 1985, and those who were deployed after 1990. Correlation coefficients were extracted for both periods of operations. Results were non-significant, indicating no correlation between problem-solving and PTSD in Lebanon between 1979 and 1985 and for after 1990. Hyer et al. (1996) examined the association between using coping strategies (including problem-solving), combat exposure and PTSD severity in treatment-seeking combat veterans with PTSD at a specialist veteran treatment centre. The relationship between problem-solving and PTSD was found to be not statistically significant, with weak negative correlations for both measures of PTSD. Kaiser et al.'s longitudinal study (2011) assessed coping strategies (including problem-solving) and captivity stressors after the

repatriation of Vietnam-era prisoners of war and mental and physical health measures three decades later. Results found that there was no association between problem-solving and PTSD, depression and anxiety. Rodrigues & Renshaw (2010) examined the associations between coping (including problem-solving), combat exposure and PTSD among National Guard/Reserves veterans. Results found no significant relationship between problem-solving and PTSD. Romero et al. (2015) examined the role of coping style (including problem-solving) and family social support on symptoms of PTSD, depression and anxiety in an undergraduate student veteran sample. Results did not find a statistically significant relationship between PTSD and problem-solving, but did find a negative relationship between problem-solving and depression and anxiety, of a moderate and low strength, respectively. Tenhula et al.'s intervention study (2014) evaluated a problem-solving training program for veterans and took measures of depression. For the purposes of this review, correlation coefficients were extracted at the pre-treatment stage. Results found a statistically significant, negative relationship between problem-solving and depression, of a moderate strength. However, this study had methodological limitations.

The studies on problem-solving ranged widely in their methodological quality, from the lowest score of 4, to 12/14 . In general, these studies were fairly limited in terms of the samples being unrepresentative, the findings not generalizable to the wider veteran population and an inadequate sample size and power.

Is there a relationship between reappraisal and PTSD?

Of the 23 studies reviewed, 4 included reappraisal and PTSD. In Boden et al.'s (2013) intervention study, the association between the use of reappraisal and total PTSD and symptom cluster severity was examined in veterans in a residential rehabilitation program for PTSD. For the purposes of this review, only pre-treatment correlation coefficients were used. Boden, Bonn-Miller et al. (2012) examined the interaction of reappraisal and emotional clarity in predicting PTSD symptom severity and positive affect in treatment-seeking veterans with PTSD. Results of these two studies revealed significant, negative relationships between reappraisal and PTSD with correlations ranging from -.31 to -.44, indicating a moderate relationship with the variables.

Dirkzwager et al. (2003) examined the relationship between social support, coping strategies (including reappraisal), stressful life events and PTSD in former

peacekeeping soldiers. Results were compared between those who participated in operations in Lebanon between 1979 and 1985, and those who were deployed after 1990. Correlation coefficients were extracted for both periods of operations. Results indicated non-significant results, with a very weak, negative relationship between reappraisal and PTSD in Lebanon between 1979 and 1985, and no relationship at all for after 1990.

Hyer et al. (1996) examined the associations between coping strategies (including reappraisal) and PTSD severity in treatment-seeking veterans with PTSD at a specialist veteran treatment centre. Results were mixed, with one measure of PTSD (Mississippi PTSD) revealing a non-significant, negative relationship, and the other PTSD measure (MMPI PTSD) indicating a significant, negative relationship with reappraisal of moderate strength.

Methodologically, these papers were not rated particularly highly, with quality ratings ranging from 4/14 to 8/14 . Boden et al. (2013) and Boden, Bonn-Miller et al. (2012) were comparable in terms of population and demographics, however the study by Boden, Bonn-Miller et al. (2012) scored one of the lowest quality ratings in this review, with the sample being unrepresentative and the findings not being generalizable to the wider veteran population. Sample size and power were calculated to be inadequate and confounding variables were not addressed. Dirkzwager et al.'s study (2003) was also limited on external validity and generalizability, although the sample was more representative in Hyer et al.'s study (1996).

Is there a relationship between rumination, PTSD and depression?

Three studies in this review examined rumination, one study exploring PTSD alone (Blackburn & Owens, 2016) and two studies exploring both PTSD and depression (Borders et al., 2012, 2015).

Borders et al. (2012) examined whether PTSD, depression and rumination contributed to risky behaviours in treatment-seeking veterans at a veteran tertiary care clinic. Borders et al., (2015) explored whether rumination contributed towards sleep problems, PTSD and depression in treatment-seeking veterans from a veteran tertiary care clinic. Results from both studies found significant, strong positive relationships between rumination and PTSD and depression. The association between rumination and PTSD was larger than the association between rumination and depression. These

two studies scored similarly in terms of their methodological quality. Although representative in terms of recruitment and the sample used, the findings of the studies were not considered generalizable to the wider veteran population, given that participants were attending treatment in specialist veteran centres and they had higher rates of PTSD and depression than the wider veteran population. The results may therefore only be generalizable to treatment-seeing veterans who served in Iraq or Afghanistan. In addition, not all participants completed the outcome measures and there was some data missing (Borders et al., 2012). The sample size and power for both studies were calculated to be adequate.

Blackburn & Owens (2016) investigated the relationships among both intrusive and deliberate rumination, combat exposure, resilience and PTSD in veterans. Results found significant, positive correlations between PTSD and both types of rumination, although the relationship between intrusive rumination and PTSD was stronger than deliberate rumination, which was found to have a moderate relationship. In terms of its methodological quality, this study was rated slightly lower, due to its poor external validity and limited generalizability of findings. However, its strength lay in the study having adequate sample size and power. The samples were all comparable in terms of veteran population (Iraq and Afghanistan), younger age and similar male to female ratio.

Is there a relationship between suppression, PTSD, depression and anxiety?

Four studies included suppression, with two examining PTSD alone, one study examining PTSD and depression and one study examining PTSD, depression and anxiety. Boden et al. (2013) explored the associations between expressive suppression and total PTSD and symptoms clusters in treatment-seeking veterans in a residential rehabilitation program for PTSD. For the purposes of this review, correlation coefficients were taken before participants started treatment on the program. Results demonstrated a significant, weak to moderate, positive relationship between suppression and PTSD and symptom clusters. However, this study did not have adequate power or sample size when this was later calculated, and the findings of the study were not rated as generalizable to the wider veteran population, due to having high levels of PTSD and receiving treatment in specialist veteran centres.

Duax et al. (2014) examined the associations among levels of social support, emotional hiding (suppression) and PTSD. Point biserial correlation coefficient ranges indicated a positive association between suppression and PTSD, however the p value and statistical significance for these correlations were not reported, therefore results must be interpreted with caution. Although the sample size was large, the population used was not representative and the reliability and validity of the outcome measure for suppression was poor since the measure had been devised by the authors and its psychometrics were not reported.

Hassija et al. (2012) evaluated the relationship between coping style (including suppression), hope, PTSD and depression in trauma-exposed, treatment-seeking veterans at an outpatient mental health care veteran facility. Suppression was measured through the Emotional Approach Coping subscale of Emotional Expression (the opposite of suppression), by reversing the correlation score. Results indicated a moderate, significant, positive relationship between suppression and PTSD and depression. This study was the highest scoring study in terms of methodological quality, with the sample being rated as representative and the findings generalizable to the wider veteran population. It was also the only study to include an equal proportion of male and female participants.

Roemer et al. (2001) investigated the role of the intensity and frequency of strategic withholding (suppression) of emotional responses among combat veterans with and without PTSD. Measures of PTSD, depression and anxiety were taken. Results found stronger relationships for suppression intensity. There was a significant, strong, positive relationship between both the frequency and intensity of suppression and PTSD. There were moderate to strong, positive relationships between depression and anxiety. The relationship between suppression and PTSD and anxiety was stronger in this study, compared to Boden et al. (2013), Duax et al. (2014) and Hassija et al. (2012). However, this study was one of the lowest rated studies in the review, due to an unrepresentative sample, questionable validity for the measure of suppression which was devised by the author for this study and an inadequate sample size and power.

The studies exploring suppression ranged widely in their methodological quality, from a low rating of 5/14 to the highest rating of 14/14 . Only one study included anxiety

and two studies included depression. Overall conclusions about suppression and mental illness must therefore be made with caution.

Table 1.3 presents a summary of the findings from this systematic review.

Table 1.3: A summary of the results: Relationships between emotional regulation strategies and mental health

Emotion regulation strategy and mental health condition	Type of relationship	Strength of statistically significant relationships	Number of studies examining this relationship	Number of statistically significant studies
Acceptance and PTSD	Negative	Strong	1	1
Acceptance and Depression	Negative	Strong	1	1
Experiential Avoidance and PTSD	Positive	Strong	4	4
Experiential Avoidance and Depression	Positive	Strong	2	2
Experiential Avoidance and Anxiety	Positive	Strong	1	1
Cognitive Avoidance and PTSD	Positive	Weak to strong	10	8
Cognitive Avoidance and Depression	Positive	Moderate	3	2
Cognitive Avoidance and Anxiety	Positive	Strong	2	1
Problem-Solving and PTSD	Positive	No relationship	6	1
Problem-Solving and Depression	Negative	Moderate	3	2
Problem-solving and Anxiety	Negative	Weak	2	1
Reappraisal and PTSD	Negative	Moderate	4	3
Rumination and PTSD	Positive	Strong	3	3
Rumination and Depression	Positive	Strong	2	2
Suppression and PTSD	Positive	Weak to strong	4	3
Suppression and Depression	Positive	Moderate to strong	2	2
Suppression and Anxiety	Positive	Moderate	1	1

1.5 Discussion

The aim of this systematic review was to explore the relationship between emotion regulation strategies and mental health in veterans. Two meta-analyses had examined these variables in the general population (Aldao et al., 2010; Seligowski et al., 2015); however, there had been no synthesis of data regarding the veteran population. This review therefore aimed to introduce a new focus to the emotion regulation literature, by only examining veteran studies. Following an electronic systematic search, 23 studies were identified that met the criteria for the review. The relationship between six emotion regulation strategies (acceptance, avoidance, problem-solving, reappraisal, rumination and suppression) and PTSD, depression and anxiety were examined by extracting correlation coefficients from the studies. The methodological quality of each study was also rated and considered in the context of the studies' findings.

Summary of research findings

Consistent with Aldao et al.'s (2010) meta-analysis, this review found that acceptance, reappraisal and problem-solving had a negative relationship with psychopathology, indicating that veteran mental health symptoms reduced when these particular emotion regulation strategies were used. Specifically, a strong relationship was found between acceptance and PTSD and depression, although there were only 2 studies on acceptance. The relationship was moderate between problem-solving and depression (based on two statistically significant studies) and it was weak between problem-solving and anxiety (based on one statistically significant study). Conversely, the relationship between problem-solving and PTSD was positive, although the correlation was so weak that a relationship could not be concluded. However, this was based on only one significant result out of a possible six studies examining problem-solving and PTSD. The five non-significant results suggested a negative relationship between the two variables. The negative relationship between reappraisal and PTSD was found to be moderate, based on three statistically significant studies. The results differed with Seligowski et al.'s (2015) meta-analysis in which there was no significant relationship between PTSD and acceptance and reappraisal. However, Seligowski et al. (2015) did not include problem-solving in their meta-analysis and only examined PTSD. Also, Aldao et al. (2010) did not include PTSD in their meta-analysis. This review has therefore enhanced the current emotion regulation literature by including these additional emotion regulation strategies and mental health conditions.

This review found that avoidance, rumination and suppression had a positive relationship with veteran psychopathology, suggesting that veterans' mental health symptoms increase when these particular emotion regulation strategies are used. This pattern of results was also consistent with Aldao et al.'s (2010) meta-analysis for the general population. Specifically, experiential avoidance had a strong relationship with PTSD (based on all four studies), whereas cognitive avoidance was found to have a weak to strong relationship (based on eight statistically significant studies). Experiential avoidance had a strong relationship with depression and cognitive avoidance had a moderate relationship with depression (both based on two studies per avoidance type). Both types of avoidance had a strong relationship with anxiety (based on one statistically significant study each). Rumination had a strong relationship with both PTSD and depression (based on three and two studies respectively). Based on

three statistically significant studies, suppression ranged from a weak to strong relationship with PTSD; moderate to strong with depression (based on two studies) and a moderate relationship with anxiety (based on only one study). These results were comparable to the meta-analysis by Seligowski et al. (2015), in which large effect sizes were found between PTSD and experiential avoidance, rumination and suppression. They are also similar to the meta-analysis by Aldao et al. (2010), in which there was a large effect size between rumination and depression; between avoidance and depression, and medium to large for avoidance and anxiety.

It would appear that results are generally consistent with previous meta-analyses, in terms of the pattern of the association between emotion regulation strategy and psychopathology, and also in the findings that the relationship between emotion regulation strategy and psychopathology varied by strategy and type of psychopathology (Aldao et al., 2010; Seligowski et al., 2015). However, given that the majority of the findings are based on a small number of studies (with the exception of the cognitive avoidance and PTSD studies), the results should be interpreted with caution and also in the context of their methodological quality.

Implications for clinical practice and future research

In light of the results suggesting that some emotion regulation strategies were more strongly related to different types of psychopathology than others, this may have implications for clinical practice, in terms of tailoring psychological interventions to veterans who struggle to regulate their emotions. In particular, the strong associations found for acceptance and experiential avoidance highlight the potential benefit of using more third-wave approaches with veterans, such as ACT or mindfulness, which target acceptance and experiential avoidance (Blevins, Roca, & Spencer, 2011; Bond et al., 2011; Glover et al., 2016), as well as CBT (prolonged exposure) (Karlin et al., 2015; Kaur, Murphy, & Smith, 2016; Schnurr, & Lunney, 2015). Strong relationships were also found between rumination and PTSD and depression, and suppression and PTSD and depression, which may highlight the benefit of cognitive approaches for veterans, particularly in trauma work (Ehlers & Clark, 2000; Ehring, Frank, et al., 2008). These findings also have implications for veteran transition services, who may be able to offer veterans skills-training in specific emotion regulation strategies when they leave the Forces.

Given the small combination of studies investigating each emotion regulation strategy with different mental health disorders in the veteran population, further, high-quality research is needed to examine these different strategies and disorders in more detail. In particular, research is needed which includes a more representative veteran sample, perhaps from a wider range of countries and including the UK, and with participants recruited from a wider range of sources, with an equal distribution in each division of the military (e.g. Army, Navy, Air Force, Marines and Reserves) and with more of an equal gender balance. As suggested by Aldao et al. (2010), it may also be useful to examine emotion regulation strategies at the state level, since veterans may use different strategies over the course of an emotional event. This may be particularly true when faced with the changing demands and challenges of civilian life where the veteran may be required to flexibly adapt to events.

Limitations of the literature

Whilst conducting this review, it became apparent that there were some limitations within the existing literature on veteran emotion regulation. For example, the veteran literature is not particularly representative of all veterans, with the majority of research conducted from the USA and from specialist inpatient veteran centres where mental health needs are complex. Furthermore, the emotion regulation literature is dominated by studies of male veterans. Whilst the military is a male-dominated profession, it would be important to recruit more females into veteran research and indeed to measure any gender differences in emotion regulation. It would also be interesting to assess for any cultural differences. Moreover, the studies rarely reported the time since the veterans had left the Forces and whether this potential confounding factor influenced veterans' mental health status and ability to regulate emotions. This factor may have had a significant impact on these variables and should be addressed in future veteran research. Other potential confounding factors that would be interesting to investigate in emotion regulation research are the influences of length of service, military role, theatres of operation, pre-existing mental health problems prior to joining and/or leaving the Forces and other significant factors such as childhood adversity, trauma and abuse.

Another limitation in emotion regulation is the issue of how the emotion regulation construct is defined and measured. A similar argument has also been raised for the coping construct (Rodrigues & Renshaw, 2010). Berking and Wupperman (2012) argue for a thorough assessment of what actually constitutes emotion regulation, as definitions of emotion regulation may encompass related but distinct constructs. Berking and Wupperman (2012) also believe that constructing valid and reliable measures to assess emotion regulation is a particular challenge, which needs to be addressed. It has been suggested that some constructs of emotion regulation may overlap and therefore measures of emotion regulation may be assessing constructs that are more alike than different (for example, suppression and experiential avoidance) (Seligowski et al., 2015). It has also been argued that existing self-report measures differ in the emotion they assess the regulation of and do not refer to a time-frame for their administration (Berking & Wupperman, 2012). In addition, the context in which the emotion regulation occurs is not often considered in research, and its individual aspects are often researched in isolation. This is despite evidence suggesting that the environment and context significantly influence emotion regulation (Aldao, 2013; Aldao & Nolen-Hoeksema, 2012) and its adaptiveness (Folkman & Lazarus, 1986), and that individuals use emotion regulation strategies in conjunction with one another during particular situations (Aldao & Nolen-Hoeksema, 2013), and that it might be more adaptive to be able to flexibly move between strategies depending on the context of the situation (Gratz & Roemer, 2004). Indeed, an emotion regulation strategy (e.g. suppression or experiential avoidance) may be very applicable in a highly threatening combat situation, however, it may not be helpful or appropriate in civilian life.

Strengths and limitations of review

There are a number of limitations which must be considered in this systematic review. Whilst every effort was made to identify all relevant emotion regulation studies, as with every review, there is a possibility that some were missed. The review was restricted to articles in English and also excluded dissertations, theses and conference abstracts, which may have also excluded some of the relevant literature and led to a publication bias. Excluding unpublished or grey literature has the potential to reduce the validity of the findings, as there is a risk that the systematic review only examines positively biased, clinically relevant or significant results and therefore may wrongly assume that this is an accurate representation of the whole evidence base (Blackhall &

Ker, 2007). However, given the very broad area, the application of specific inclusion and exclusion criteria enabled the search to be narrowed down to make the review as specific as possible and to reduce the likelihood of "contamination" from potential confounding factors (for example, from physical health or medical conditions). Despite applying the specific inclusion and exclusion criteria, due to the complexity of the review, there may have been a degree of "construct overlap" and subjective bias when determining the specific type of emotion regulation strategy. For example, some of the cognitive avoidance coping measures also incorporated *behavioural* avoidance strategies, (which were part of the exclusion criteria), which may have led to a slight overlap in constructs.

In addition, the review included quite a heterogenous sample and it was not possible to differentiate between various potential confounding factors such as specific theatres of war, degree of combat exposure and length of time since leaving the Forces. Furthermore, most of the studies' key aims were not to examine the relationship between emotion regulation and psychopathology, so extracting the applicable information for this review was not always straight-forward. The likelihood of confounding factors may well have therefore been high.

It is also worth noting that the majority of studies were cross-sectional in design, and, as with all cross-sectional studies, causal inferences about the direction of the relationship between emotion regulation and psychopathology cannot be made. Focusing on experimental designs in future research may address this. A further limitation was the use of self-report outcome measures, which can be subject to recall bias or the over- or under-reporting of distress (Hassija et al., 2012), although clinically administered PTSD measures were used in some studies. The validity and usefulness of some specific measurement tools has also been debated, for example, with the Ways of Coping Questionnaire (Lazarus & Folkman, 1987). This may partially explain the lack of the relationship between problem-solving (as measured by the WCQ) and PTSD. A further limitation was the small number of studies combining different types of emotion regulation with the different types of mental health conditions. Due to the nature of assessing the methodological quality of the study, there may also have been some subjective bias, however this was reduced by inter-rater checks which produced a high level of agreement.

Conclusion

This was a broad systematic review examining veteran emotion regulation and mental health. It highlighted that the emotion regulation literature in general can be quite ambiguous and that the construct can be hard to quantify and categorise. More precise ways of measuring the specific strategies are therefore required. Consideration of the unpublished literature and further research into the different types of emotion regulation in veterans, with improved methodological design, is needed before definitive conclusions can be drawn. However, the results of this systematic review have provided preliminary evidence that there is a relationship between emotion regulation strategies and veteran mental health, and that the strength and type of this relationship differs, depending on the emotion regulation strategy and depending on the mental health condition.

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Chapter 2:

The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life

2.1 Abstract

Aim: Most veterans have a successful transition to civilian life when they leave the military. However, there are some who struggle to cope and adjust to the demands and challenges of civilian life. This study explores how a variety of psychosocial factors influence veteran adjustment to civilian life in Scotland, UK, and which of these factors predict a poor adjustment.

Methods: 154 veterans across Scotland completed a set of questionnaires which measured veteran adjustment difficulty, quality of life, mental health, stigma, self-stigma, attitude towards help-seeking, likelihood of help-seeking, experiential avoidance, reappraisal and suppression.

Results: Veteran adjustment difficulty and quality of life were significantly correlated to a number of psychosocial factors. Mental health, experiential avoidance and cognitive reappraisal were found to be predictors of veteran adjustment difficulty, and experiential avoidance and cognitive reappraisal partially mediated the relationship between mental health and veteran adjustment, with experiential avoidance being the stronger mediator. The effect of mental health problems on adjustment partially depends on how accepting veterans are of their uncomfortable thoughts, feelings and memories, or how much they engage with reappraising these internal experiences. Being able to reappraise and accept (rather than avoid) difficult situations, thoughts and feelings, is likely to be more adaptive and contribute to a better transition from military to civilian life.

Discussion: Implications for veterans, as well as the services and professionals involved with veteran transition and healthcare are discussed, in terms of the importance of education and training in the factors that contribute to a poor transition, and how early, appropriately tailored intervention might help facilitate a better adjustment from military to civilian life. For example, the evidence from this study could inform the type of training provided by veteran transition services regarding the impact that veteran mental health, experiential avoidance and reappraisal have on

veteran transition. Early assessment of these factors and the provision of relevant emotion regulation skills-training could also potentially reduce the veteran's need for more complex (and costly) psychological interventions in the future.

Key message:

- Veteran adjustment difficulty from military to civilian life is correlated to a number of psychosocial factors.
- Mental ill-health, experiential avoidance and cognitive reappraisal are predictors of poor adjustment difficulty.
- Experiential avoidance and cognitive reappraisal partially mediate the relationship between mental ill-health and adjustment difficulty, with experiential avoidance being the stronger mediator.
- The effect of mental health problems on adjustment partially depends on how accepting veterans are of their uncomfortable thoughts, feelings and memories, or how much they engage with reappraising these internal experiences.
- Results highlight the importance of training professionals involved with veteran transition about the psychological factors that contribute to re-integration difficulties and how these can be overcome.

Key words:

Veteran adjustment difficulty; civilian life; mental health; experiential avoidance; reappraisal

2.2 Introduction

The definition of a veteran is an individual who has served for at least a day, either as a Regular or a Reservist in HM Armed Forces (Scottish Government, 2012b). There are an estimated 400,000 veterans living in Scotland, with Scotland contributing more military personnel per head of population than any other part of the UK (Scottish Government, 2012b). Approximately 1,800 veterans leave the forces each year and settle all over Scotland (Scottish Government, 2015), some as young as 19 or 20 years old (Scottish Government, 2012b). Following the withdrawal of British troops in 2014 from the conflict in Afghanistan, the veteran population may also be expected to increase.

Transitioning from Military to Civilian Life

The civilian world can feel very unfamiliar, unsafe and unpredictable to a service-leaver, as they attempt to find a new job, home and community and adjust to a way of life that is very different from the one they have just left *(Transition in Scotland* report, Scottish Government, 2015). A "good transition" is defined as: "…one that enables ex-Service personnel to be sufficiently resilient to adapt successfully to civilian life, both now and in the future. This resilience includes financial, psychological and emotional resilience, and encompasses the ex-Service person and their immediate families." (Forces in Mind Trust, 2013, p5).

A successful transition can help to secure a job, home and social network, but not every service-leaver will be equipped with the appropriate skills and support to achieve this (Scottish Government, 2015). According to Adler, Zamorski, & Britt, (2011), transitioning psychologically from a potentially dangerous and demanding environment to one that is relatively safe and comfortable requires some adjustment. It involves a psychological shift in one's self-concept (from military to civilian), managing changes in attitude and incorporating military-related memories into the context of the home environment. How service-leavers experience the transition can have an impact on their quality of life (Adler et al., 2011).

Most service-leavers have a successful transition into civilian life (Lord Ashcroft KCMG PC, 2014). However, there is a minority who struggle to re-integrate and who experience serious difficulties, including in health, employment, housing, finance, welfare and training (Lord Ashcroft KCMG PC, 2014). Research and anecdotal reports suggest that some ex-service personnel struggle with various aspects of civilian life and mental health has been identified as one of the key transition issues (Forces in Mind Trust, 2013). There is also an economic impact, with poor transition costing a conservatively estimated £113.8 million in 2012 (Forces in Mind Trust, 2013). Entering the criminal justice system can also reinforce re-integration difficulties, and veterans in the criminal justice system have been shown to struggle to adjust to life outside the military (Howard League for Penal Reform, 2011; Macdonald, 2014). One might also predict an increase in adjustment difficulties in the future, following the restructure of the Armed Forces and the increased reliance on Reservists (Ministry of Defence, 2011), who are a more vulnerable group (Macmanus et al., 2014). All of

these factors are likely to have an influence on veterans' ability to cope with civilian life and achieve a quality of life.

Models of Transition and Adjustment

There are two military-specific transition models which may provide a framework to help us understand veteran difficulties: the model of deployment-to-home transition (Adler et al., 2011) and military transition theory (Castro, Kintzle, & Hassan, 2014). The model of deployment-to-home transition suggests that deployment variables (such as deployment experiences, anticipation of homecoming and meaningfulness of the work) influence how the transition will be experienced across physical, emotional and cognitive and social domains, which may be moderated by factors such as whether the individual has incorporated deployment experiences into a coherent narrative or sense of self. Each of these domains is considered to have an impact on the veteran's quality of life. This model depicts a dynamic process whereby not all domains will transition at the same rate and that the individual may have both positive and negative experiences with the transition process (Adler et al., 2011).

Military transition theory is a new theoretical framework that identifies when veterans are likely to face challenges during key moments of the transition process and suggests that three interacting and overlapping phases describe individual, interpersonal, community and military organisational factors that influence the transition process (Castro and Kintzle, 2016). "Approaching the military transition" is the first phase of leaving the military, and outlines factors that may impact the transition. These include military cultural factors (e.g. type of military discharge and combat history), personal characteristics (e.g. current physical and mental health), expectations and preparedness and the nature of the transition (e.g. positive or negative, predictable or unpredictable). For example, Castro and Kintzle (2016) suggest that service members who have unmet psychological health needs are likely to experience additional challenges during transition. "Managing the transition" is the second phase of military transition theory and relates to factors that affect the individual progression from service member to civilian. These include individual adjustment factors (e.g. coping styles, attitudes and beliefs), military transition management (e.g. benefits, education, career planning) and community and civilian transition support systems. The final phase "Assessing the transition" measures outcomes associated with transition, such as indicators of work,

family, health, general well-being and community. Emerging empirical support for this theoretical framework has been found in military research examining successful transition (Gamache, Rosenheck, & Tessler, 2000), military-related suicides (Castro & Kintzle, 2014) and military sexual assaults (Castro, Kintzle, Schuyler, Lucas, & Warner, 2015).

The Influence of Psychosocial Factors on Veteran Adjustment

A number of psychosocial factors have been associated with veteran adjustment and quality of life. These include mental health, attitudes towards seeking help, stigma and self-stigma. It has also been suggested that the inability to regulate emotions may be linked to veteran transition (Adler et al., 2011).

Veteran Mental Health

Contrary to public perception, evidence suggests that rates of post-traumatic stress disorder (PTSD) are low amongst the British forces, with a prevalence rate of 4% which is similar to the general population, and a 6% rate in combat troops (Hunt, Wessely, Jones, Rona, & Greenberg, 2014). Research indicates that veterans have an increased risk of alcohol misuse, depression, anxiety disorders and aggression (Iversen & Greenberg, 2009; Iversen et al., 2009). Furthermore, some groups are more vulnerable to mental health problems. Research indicates that Reservists are particularly vulnerable to common mental health problems when they return home, as well as combat personnel (Harvey et al., 2011; Hotopf et al., 2006; Macmanus et al., 2014) and Early Service Leavers (who have served up to four years), who receive the most basic transition support package (Lord Ashcroft KCMG PC, 2014). Adler at el. (2011) have also reported that a difficult transition may lead to subsequent mental health problems and highlight the need for a better managed and supported transition process (Adler et al., 2011). Hotopf et al (2006) found that UK Reservists who deployed to the 2003 Iraq War were more than twice as likely to report symptoms of common mental health problems and probable PTSD than those who did not deploy (Hotopf et al., 2006). Furthermore, in a post-deployment study with 4,991 UK military personnel (Harvey et al., 2011), Reservists were found to more likely feel unsupported by the military and experience difficulties with social functioning after returning home. Perceived lack of military support was associated with increased reporting of probable PTSD and alcohol misuse (Harvey et al., 2011). Veteran mental health has also been

associated with poorer quality of life, particularly with those who were deployed (Toomey et al., 2007). A review by Schnurr, Lunney, Bovin, & Marx (2009) found similar results to other veteran studies in that there is an association between PTSD and reduced quality of life in veterans.

Attitude Towards Seeking Help

Despite the prevalence of mental health disorders of serving and ex-service personnel (Fear et al., 2010), the use of mental health services by veterans does not match the expected prevalence and need. For example 40% - 60% of those who could benefit from professional treatment do not seek help from services (Hoge et al., 2004; Iversen et al., 2011). This highlights the importance of researching factors that influence mental health service use (Vogt, 2011). Of the veterans accessing support in the UK, help is mainly sought from non-medical or informal sources, such as chaplains, peers or friends (Iversen et al., 2010). Much research has examined barriers to help-seeking in the military population, and has identified a variety of factors. These include practical barriers to care (e.g. scheduling an appointment) (Iversen et al., 2011); poor recognition of the need for treatment (Iversen et al., 2010) and negative attitudes towards mental health treatment (Kim, Britt, Klocko, Riviere, & Adler, 2011). Military studies indicate that failure to engage with mental health support is related to expectations of a negative treatment outcome and negative views about the causes of mental illness (Kim et al., 2011; Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009). Mental healthcare is often considered as potentially damaging to a military career (Rowan & Campise, 2006) and so may reduce the likelihood of seeking help. Having stigmatising beliefs (stigma) is also found to have a significant role on help-seeking behaviours (Ben-Zeev, Corrigan, Britt, & Langford, 2012; Gould et al., 2010; Iversen et al., 2011; Kim et al., 2011; Langston et al., 2010; Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009). Indeed, those with mental health problems who would potentially have the most to gain from support, experience the highest levels of stigma and barriers to care (Gould et al., 2010; Hoge et al., 2004). It could therefore be argued that having a negative attitude towards seeking help for psychological problems and thereby not seeking help, will have an adverse effect on the veteran's ability to re-integrate into civilian life and subsequent quality of life.

Stigma

Stigma relates to concerns about other people's reaction to mental illness and incorporates societal rules and regulations that disadvantage people with mental health problems (Jones, Keeling, Thandi, & Greenberg, 2015). Stigma can occur at an individual, interpersonal and socio-cultural level (Chaudoir, Earnshaw, & Andel, 2013). In a military context, stigma refers to service personnel believing that seeking care would be embarrassing, cause their peers to have less confidence in them and have negative consequences on their career (Britt, 2000). Stigmatisation occurs when groups with a power stereotype discriminate or hold prejudices against a group that has been labelled as different (Sharp et al., 2015; Thornicroft, 2008). This could relate to shared cultural beliefs held by the public or military about attributes of those with mental health conditions (Sharp et al., 2015). Stigma beliefs acquired during active duty service that mental health problems can reduce their opportunities, negatively impact their military career and cause them to be treated differently, may carry over into civilian life, impacting the individual's adjustment. The difficulties of transitioning to civilian life may reinforce the veteran's counterproductive beliefs about treatment, and the motivation to engage in treatment will be further reduced (DeFraia, Lamb, Resnick, & McClure, 2014).

Interestingly, results from a recent systematic review and meta-analysis which examined the prevalence of stigma for seeking help for a mental health problem among military personnel, found no association between stigma and help-seeking intentions or mental health service use, with only a minority of studies finding a positive association (Sharp et al., 2015). The authors hypothesised that the lack of association was due to an intention-behaviour gap, where individuals who would be disinclined to seek help were more likely to do so only when they reached crisis point or were enabled to by others (e.g. family, friends, unit) to overcome stigma. Methodological shortcomings in the stigma research were also highlighted, as well as the need to research other potential help-seeking barriers in military populations, including self-stigma and negative attitudes towards mental health treatment (Sharp et al., 2015).

Self-stigma

Self-stigma relates to self-perception, and is represented by an internalised mental health-related prejudice (Corrigan & Watson, 2002). It refers to a "stigmatised

individual's internalisation of actual or perceived negative societal beliefs toward those who have mental health problems" (Sharp et al., 2015 p145) and can lead to feelings of shame and inadequacy which may reduce a person's confidence in seeking help (Vogel, Wade, & Haake, 2006). Self-stigma is linked with greater psychiatric symptoms, limited engagement and impaired functioning (Yanos et al., 2012). Furthermore, Blais & Renshaw (2013) found that veteran self-stigma was negatively associated with help-seeking intentions from a mental health professional, doctor or advanced practice nurse and that being married was positively associated with help-seeking intentions from a mental health professional (Blais & Renshaw, 2013). There also appears to be a relationship between stigma and self-stigma, with awareness and endorsement of stigma predicting self-stigma, which in turn influences help-seeking attitudes and intentions (Bathje & Pryor, 2011; Vogel, Wade, & Hackler, 2007). In a mediation study, Vogel et al. (2007) found that the link between perceived public stigma and willingness to seek counselling was fully mediated by self-stigma and attitudes. These findings were supported by Bathje & Pryor (2011) who also found that public stigma and self-stigma were related to attitudes to seeking counselling and that attitudes were related to intentions to seek counselling. Similarly, Britt et al (2011) found perceived stigma and beliefs about psychological problems to be related to attitude towards treatment-seeking and barriers being related to perceived control in Reserve Component veterans (Britt et al., 2011). Some studies, however, have found no association between stigma and help-seeking behaviour (Golberstein, Eisenberg, & Gollust, 2008).

Emotion regulation

For some veterans, the overall adaptation to civilian life can be influenced by their ability to express and regulate their emotions appropriately (Adler et al., 2011), however, the construct of emotional regulation has had little attention in the field of transition research. For example, when deployed, suppressing emotional responses may be an appropriate way to manage emotions in a dangerous, life-threatening situation. However, once home, learning to recognise and appropriately express such emotions in the civilian world may be difficult and make adjustment particularly challenging (Adler et al., 2011). A recent systematic review on emotion regulation and veteran mental health found that some emotion regulation strategies were associated with particular mental health conditions (see Chapter 1). For example, reappraisal was

found to be related to a reduction in PTSD symptoms; and suppression and experiential avoidance were related to an increase in PTSD, depression and anxiety symptoms.

Experiential Avoidance

Experiential avoidance refers to when an individual is unwilling or unable to remain in contact with difficult or uncomfortable internal experiences (such as unwanted thoughts, memories, emotions, urges and physical sensations) and efforts are made to avoid, alter or escape from those experiences (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Experiential avoidance is thought to play a key role in the development and maintenance of psychopathology (Hayes, Strosahl, & Wilson, 2012). Experiential avoidance may be adaptive in the aftermath of a trauma (e.g. in a combat situation), however, the learned association of threat to certain thoughts and feelings can be interpreted as an inability to deal with normal, negative emotions that occur during challenging situations in day-to-day life (Kashdan et al., 2009). Experiential avoidance can therefore interfere with the process of trauma recovery. It is argued that experiential avoidance blocks the pursuit of values-based goals (Hayes, Luoma, Bond, Masuda, & Lillis, 2006) and reduces an individual's ability to flexibly adapt to situational challenges and demands (Brockman et al., 2016). In a veteran context, such challenges and demands may include transitioning to civilian life and values-based goals might include goals related to employment, financial security, maintaining heathy relationships and a good quality of life.

Reappraisal

Cognitive reappraisal involves an individual generating positive or non-threatening interpretations or of a stressful situation, so as to change their emotional response and reduce distress (Gross, 1998). For example, a veteran might interpret a loud noise as gun-shots, which may consequently cause considerable distress and lead to symptoms of PTSD. Alternatively, and taking into account their environment and context (they are now a civilian and live in a relatively safe community), they might reappraise this potentially triggering noise as fireworks. One could argue that reappraising in this way may reduce the veteran's sense of current threat and therefore have a positive influence on their mental health, quality of life and transition. Indeed, reappraisal has been found to positively influence emotions, wellbeing and relationships, with those who cognitively reappraise a situation experiencing and expressing greater positive

emotion and lesser negative emotion (Gross & John, 2013). Moreover, research has shown that when veterans use reappraisal, their symptoms of PTSD reduce (Boden et al., 2013, Boden, Bonn-Miller et al., (2012); Hyer et al., (1996)).

Suppression

Suppression refers to the emotion regulation strategy used to suppress (or "bottle up") unwanted emotions (Gross, 1998a). In contrast to reappraisal, people who suppress their emotions are more likely to experience and express lesser positive emotion but experience more negative emotion (Gross & John, 2003). Suppression, which, one could argue may be encouraged in military culture where it could be considered an adaptive strategy (Castro & Adler, 2011), is associated with worse interpersonal functioning and reduced well-being (Gross & John, 2003).

Although particular emotion regulation strategies may at times be appropriate, evidence suggests that being able to adapt responses to best match situations is important (Bonanno, Papa, Lalande, Westphal, & Coifman, 2004), and that flexible application of different types of emotional expression should be considered, depending on the situation (Kashdan & Rottenberg, 2010). This is in contrast to studies suggesting some regulatory strategies (e.g. cognitive reappraisal) are always better than others (e.g suppression) (Gross & John, 2003). Furthermore, a study exploring successful coping strategies for stressful life events indicated that those who demonstrated coping flexibility were better adjusted and showed fewer symptoms of anxiety and depression, compared to those who adhered more rigidly to particular coping strategies (Cheng, 2001). Such research could lead to the hypothesis that greater use of more adaptive or appropriate emotion regulation strategies in veterans is associated with greater adjustment to civilian life.

Aims of this Study

Based on the current literature on veteran mental health and adjustment difficulties; stigma, likelihood of seeking help and attitude towards help-seeking; and emotion regulation(experiential avoidance, reappraisal and suppression), this exploratory study aims to examine the influence of these variables on veteran adjustment from military to civilian life, as depicted by *figure 2.1*. The principal objective of this research is to examine whether these variables are predictors of veteran adjustment and quality of

life. A further objective is to examine whether variables such as stigma, experiential avoidance, reappraisal and suppression act as potential mediators of veteran adjustment difficulty.

Figure 2.1: Representation of Proposed Model

Potential relationships between predictor variables are represented by dotted lines.

2.3 Methods

Participants

Study participants were veterans living in Scotland. Participants were included who served in the Armed Forces, either in the Regular or Reserve military and who left

between 2001 and 2016. Participants were excluded if they left the Armed Forces before 2001, were unwilling or unable to provide consent and who were non-English speaking.

Recruitment

Participants were recruited across Scotland between February 2016 and February 2017. Participants were recruited through the display of posters in public areas, email and social media, via veteran organisations (e.g. Combat Stress, Scottish Legion). Participants were also recruited through a specialist NHS veteran "one-stop shop" service, Veterans First Point Scotland (V1P), which has several branches across Scotland. An online link to the study questionnaire was also hosted on the V1P website. Veterans in custody were also recruited, through the Scottish Prison Service in 15 prisons across Scotland.

Procedure

Participants were invited by designated veteran organisation staff members who had been informed about the study, to complete either a paper questionnaire (which they could access at their nearest V1P service) or an online questionnaire, which could be accessed via email links, social media links or though the V1P website study link. Existing clients attending their local V1P branch (for example, for a V1P drop-in session) were able to access the internet through V1P computers. Both questionnaires were identical and could be completed in the participant's own time.

Potential participants expressing an interest in joining the study were asked to read through the Patient Information Leaflet (Appendix C) and an informed consent form before agreeing to participate (available on both paper and online questionnaires). Contact details for the research team were provided and the principal researcher was also available at one of the V1P sites on a regular basis to assist any participants who had questions about the study.

Veterans in custody were invited to take part in the study by a designated Veteran in Custody Support Officer (VICSO) at each prison. Those who expressed an interest in participating were given the paper version of the Participant Information Leaflet and consent form as internet access was not allowed.

After providing informed consent, participants completed either the paper or online questionnaire pack (Appendix D). Completed questionnaires were returned in stamped, addressed envelopes provided for those who completed the paper questionnaire. Completed online questionnaires were submitted online using the Bristol Online Survey (BOS) software. The BOS is fully compliant with all UK data protection laws.

The study received ethical approval from the University of Edinburgh Research Ethics Committee, the West of Scotland NHS Research Ethics Committee and the Scottish Prison Service Research Access and Ethics Committee (see Appendix E). NHS Research and Development approval from relevant NHS health boards was also obtained (see Appendix F).

Measures

Participants completed the following ten self-report questionnaires:

Demographic Information

A demographic questionnaire was devised to establish the following veteran information: gender; age; relationship status; number of children/dependents; living arrangements; education; employment status; housing status; benefits and pension status; branch of military; Regular or Reservist service; military rank at discharge; combat or support role; conflicts and tours served; length of service; time since discharge and reason for end of service.

Use of Mental Health Services

A brief self-report questionnaire asking about the participant's perceived current and previous mental ill-health; current and previous use of prescribed medications for mental ill-health; likelihood of seeking help in the past; current and previous receipt of help from a mental health professional and the source of current and previous mental health treatment.

Military to Civilian Adjustment

The Military to Civilian Questionnaire (M2C-Q) (Sayer et al., 2011) is a brief, self-report measure which assesses re-integration difficulty among veterans. The M2C-Q has 16 items which assess difficulty in post-deployment community re-integration in the following domains: interpersonal relationships with family, friends and peers; productivity at work, in education or at home; community participation; self-care; leisure and perceived meaning of life. Items are rated on a five-point Likert scale from 0 (no difficulty) to 4 (extreme difficulty) and participants can indicate "does not apply" for four items assessing relationship with spouse/partner, relationship with children, work and education functioning. As in the M2C-Q (Sayer et al., 2011), this study also included the additional item assessing the veterans' perceived overall difficulty re-adjusting to civilian life, using the same 5-point Likert scale. As the M2C-Q is an American measure and contains some American terminology, nouns on three items were replaced with more culturally appropriate language – for example, replacing "yard work" with "gardening".

In the development study (Sayer et al., 2011), common factor analysis of the M2C-Q indicated high internal consistency (Cronbach's $\alpha = .95$) and that a single total score should be used. A higher score indicated greater re-integration difficulty. The M2C-Q was calculated to also have a high level of internal consistency for this study, as determined by a Cronbach's alpha of .95.

Quality of Life

The EUROHIS-QOL is a brief, self-administered, 8-item questionnaire that measures quality of life, derived from the WHOQOL-100 and the WHOQOL-BREF (Skevington, Lotfy, & O'Connell, 2004; WHOQOL GROUP, 1998a, 1998b). It has wide-ranging use in different cultural, clinical and research settings and covers four domains: physical, psychological, social and environmental (Schmidt, Mühlan, & Power, 2006). Respondents rate their answer according to a 5-point Likert scale, ranging from "not at all" to "completely". The overall quality of life score is calculated by summing up scores on the eight items, with a higher score indicating better quality of life. The EUROHIS-QOL has been found to have good psychometric properties, with good internal consistency (Cronbach's $\alpha = .83$), and has been recommended for use in public health research (Rocha, Power, Bushnell, & Fleck, 2012; Schmidt et al.,

2006). The EUROHIS-QOL was calculated to also have a high level of internal consistency for this study, as determined by a Cronbach's alpha of .89.

Mental Health

The Clinical Outcomes in Routine Evaluation-10 (CORE-10) is a brief, 10-item, client-rated measure covering anxiety, depression, trauma, physical problems, functioning and risk to self. Each question is rated on a 4-point Likert scale, ranging from “not at all” to “most or all of the time”, with a total score of 40. A score of 10 or below represents a non-clinical range, and a score of 11 or above is within the clinical range. It has good psychometric properties with good internal consistency for both men and women (α = .81 and .82, respectively) and good correlations between measures of anxiety, depression and general mental health (Connell & Barkham, 2007). The CORE-10 was calculated to have a high level of internal consistency for this study, as determined by a Cronbach's alpha of .92.

Attitude and Intention to Seek Treatment

An item assessing both the veterans’ attitude towards seeking treatment from a mental health professional and the likelihood of them seeking this treatment, were they struggling with mental health problems, was devised. The attitude item was adapted from a veteran treatment-seeking study by Britt et al. (2011) and is rated on a 4-point Likert scale, ranging from very negative (1) to very positive (4). The intention to seek treatment item was also rated on a 4-point Likert scale, ranging from very unlikely (1) to very likely to seek help (4). The scale was calculated to have a high level of internal consistency for this study, as determined by a Cronbach's alpha of .85.

Stigma

The Stigma Scale for Receiving Psychological Help (SSRPH) (Komiya, Good, & Sherrod, 2000) is a 5-item measure examining how stigmatizing it is to receive psychological treatment, focusing on social stigma (Clement et al., 2012). A 4-point Likert scale is used for each question, rating from 0 (strongly disagree) to 3 (strongly agree), with a total score range of 0 to 15. Higher scores indicate high levels of stigma. The SSRPH has good internal consistency (α = .72), good content and construct validity, correlating with attitude towards seeking professional help ($r = -.40$, $p < .0001$) (Komiya et al., 2000). This study used Golberstein’s adapted version of the

SSRPH, which refers to any type of mental health treatment (rather than referring solely to psychological treatment) (Cronbach's α = .74) (Golberstein, Eisenberg & Gollust, 2008). The SSRPH was calculated to have a high level of internal consistency for this study, as determined by a Cronbach's alpha of .83.

Self-Stigma

The Internalised Stigma of Mental Illness (ISMI) is a 29-item measure that assesses the subjective experience of stigma, or self-stigma (Ritsher, Otilingam, & Grajales, 2003). It measures domains of alienation, stereotype endorsement, perceived discrimination, social withdrawal and stigma resistance, and is rated using a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). The measure was adapted for this study by including a "does not apply to me" (0) response. The ISMI was developed in collaboration with people with mental health problems, including the input of a veteran focus group. A validation study of mental health veteran outpatients showed that the ISMI has strong psychometric properties, strong internal consistency (α = .90), test-retest reliability (r = .92) and construct validity, as do the individual subscales (Ritsher et al., 2003). Furthermore, a systematic review in the psychometric assessment of twenty-one internalised stigma instruments rated the ISMI in the top two in terms of psychometric properties (Stevelink, Wu, Voorend, & van Brakel, 2012). The ISMI was calculated to have a high level of internal consistency for this study, as determined by a Cronbach's alpha of .97 for alienation, .89 for stereotype endorsement, .96 for perceived discrimination, .95 for social withdrawal and .83 for stigma resistance.

Experiential Avoidance

The Acceptance and Action Questionnaire – II (AAQ-II) is the most widely used measure of experiential avoidance in research (Bond et al., 2011). The AAQ-II is a revised version of the AAQ and is a 7-item measure, rated according to a 7-point Likert scale of 1 (never true) to 7 (always true). A higher score indicates greater experiential avoidance. A validation study (N=2816) indicated satisfactory structure, reliability and validity of the AAQ-II, with a mean α coefficient of .84, and 3- and 12-month test-retest reliability of .81 and .79 (Bond et al., 2011). It also found that the AAQ-II predicts a range of variables to which it is theoretically linked, including greater levels of psychological distress and mental ill-health (Bond et al., 2011). The AAQ-II was

calculated to have a high level of internal consistency for this study, as determined by a Cronbach's alpha of .96.

Reappraisal and Suppression

Emotion Regulation Questionnaire (ERQ) is a 10-item measure assessing individual differences in the habitual use of two emotion regulation strategies - cognitive reappraisal (6 items) and expressive suppression (4 items) (Gross & John, 2003). It is rated according to a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) and separate scores are calculated for each strategy. It has been found to have good psychometric properties, with internal consistency α reliabilities of .79 for reappraisal and .73 for suppression, and test-retest reliability across three months at .69 for both scales (Gross & John, 2003). The ERQ was calculated to have a high level of internal consistency for this study, as determined by a Cronbach's alpha of .92 for reappraisal and .80 for suppression.

Sample Size and Power

The sample size needed for this research is calculated to be 172, using Daniel Soper's *a-priori* sample size calculator for multiple regression (Soper, 2015). This is based on a power level of 0.8 (Cohen, 1988) for a medium effect size (f^2) of 0.15 at a significance level of 0.05, with 25 potential predictor variables (gender; age; accommodation stability; benefits status; Regular or Reservist; combat or support role; number of tours; length of service; current and previous mental health status; current and previous mental health input from a mental health professional; current and previous prescribed medication; stigma; five self-stigma subscales; attitude towards seeking treatment; likelihood of seeking treatment; experiential avoidance; suppression and reappraisal). This calculation is a conservative estimate as it assumes that none of the predictor variables have been shown to explain variance in the outcome measures. Furthermore, subsequent planned mediation analysis to answer the secondary research question would require an N of at least 100, as suggested by Ma & Zeng (2014). A minimum sample size of 172 was therefore deemed most appropriate.

Statistical Analysis

All analyses procedures were conducted using the IBM Statistical Package for Social Sciences (SPSS) version 22. Pearson correlations were used initially to explore the

associations between the outcome variables and main independent variables. Hierarchical multiple regressions were then conducted for the primary research question, to ascertain if the previously mentioned independent variables were predictors of veteran adjustment and quality of life (the outcome variables). Separate analyses were conducted for each outcome measure. All assumptions for correlation and hierarchical multiple regression were met (Laerd Statistics, 2015) and bootstrapping using the re-sampling method of 1000 bootstrap re-samples was used for all analyses as a way of increasing robustness (Field, 2013). The secondary research question asks whether stigma, experiential avoidance, reappraisal and suppression act as potential mediators between veteran adjustment difficulty. This mediation relationship was selected post-hoc, based on the preceding correlational and regression analyses from the same sample. This was tested by a multiple mediation model, using the product-of-coefficients approach and bootstrapping, as described by Preacher and Hayes (2008). The PROCESS macros as described by Hayes (2013), tested the different paths of mediation.

Participants who had at least 20% missing data on any questionnaire were excluded from data analysis. Participants were also excluded from analysis if they responded "not applicable" for every single item in the ISMI questionnaire. This resulted in a total of 22 participants who were removed from data analysis. The pattern of missing values for the remaining participants was analysed using Little's MCAR test to assess whether any data in the outcome measure questionnaires was missing completely at random or not. Results from Little's MCAR indicated that such data was missing at random. Missing values in the questionnaire data were therefore imputed by replacing them with the series mean.

Data was screened to ensure assumptions were met for further analysis. Given the large sample (N>100), normality was checked by eye-balling histograms and Q-Q plots (Tabachnick & Fidell, 2012). There were no outliers. To account for potential deviations from normality and to add robustness to the analyses, bootstrapping was used, using 1000 bootstrap re-samples.

2.4 Results

Demographic information

A total of 195 participants took part in the study. However 19 participants did not meet inclusion criteria (left the Armed Forces before 2001) and were therefore excluded from the study. After participants with missing data had also been excluded (see above), this resulted in a sample size of 154. Table 2.1 presents the demographic data. Participants served in conflicts as diverse as Iraq and Afghanistan, Northern Ireland, the Falklands, Kosovo and peace-keeping missions such as Cyprus. Most respondents had served in one or two tours and for between 5 to 25 years. The mean years since leaving the Forces was 7.4 years (standard deviation = 4.48). Appendix G presents additional demographic information.

Table 2.1: Demographic variables of sample

Demographic Variable	**n**	**%**
Gender (N = 152)		
Male	130	85.5
Female	22	14.5
Age (N = 154)		
25-34 years	33	21.4
35-44 years	49	31.8
45-54 years	54	35.1
55-64 years	17	11.0
65+ year	1	0.6
Marital status (N = 154)		
Single, never married	27	17.5
Married/civil partnership	78	50.6
Co-habiting	15	9.7
Separated or divorced	32	20.8
Widowed	2	1.3
Dependents (N = 151)		
Yes	84	55.6
No	67	44.4
Living arrangements (N = 154)		
Live alone	38	24.7
Live with partner/spouse	43	27.9
Live with children	4	2.6
Live with partner/spouse and children	55	35.7
Live with relatives	4	2.6

Homeless	1	0.6
House of multiple occupancy	2	1.3
Prison	7	4.5

Stable living situation (N = 154)

Yes	134	87.0
No	20	13.0

Education (N = 153)

Less than high school	6	3.9
High school level (e.g. Standard Grades/Highers)	33	21.6
Vocational training/trade/technical (e.g. NVQ; HNC; HND; Command, Leadership and Management programme)	84	54.9
Higher education (e.g. graduate degree, post-graduate degree)	30	19.5

Employment (N = 154)

Employed full-time	88	57.1
Employed part-time	19	12.3
Unemployed	15	9.7
Retired	6	3.9
Signed off sick - employed	2	1.3
Signed off sick - unemployed	19	12.3
Student	2	1.3
Voluntary	3	1.9

Regular/Reserves (N = 152)

Regulars	136	89.5
Reserves	16	10.5

Military branch (N = 154)

British Army	110	71.4
Royal Navy	8	5.2
Royal Air Force	33	21.4
Royal Marines	3	1.9

Rank at discharge (N = 154)

Not officer (e.g. Private)	29	18.8
Officer and above (e.g. JNCO, SNCO, Warrant Officer, Second lieutenant/Captain, Major or above)	125	81.2

Deployment role (N = 152)

Combat	71	46.7
Support	81	53.3

Served in conflicts between 2001 and 2016 (N = 152)

Yes	117	77
No	35	23

Reason for leaving the Armed Forces (N = 153)

Normal Service Leaver	77	50.3
Early Service Leaver	2	1.3

Medical discharge	42	27.5
Dismissal	6	3.9
Other	26	17.0

Mental health support

Table 2.2 presents data on perceived previous and current mental illness prevalence and related medication prescription. With regards to mental health input, out of the 101 participants who self-reported they suffered from mental health issues in the past, 67 (66%) sought help. Out of the 76 participants who self-reported that they were currently suffering from mental health issues, 41 (54%) sought help from a mental health professional. Table 2.3 presents the sources of professional help for those participants who received help. "Psychological Services" included clinical psychology, psychological therapy/CBT and counselling. "Other" included a peer support worker, mental health nurse, military GP, military CPN and friend with counselling qualification.

Table 2.2: Self-reported mental health prevalence and medication

Suffering from mental health issues	**In the past (N = 153)**		**Currently (N = 154)**	
	n	**%**	**n**	**%**
Yes	69	45.1	76	49.7
No	84	54.9	77	50.3
Taking prescribed medication for mental health issues	**In the past (N = 153)**		**Currently (N = 154)**	
	n	**%**	**n**	**%**
Yes	49	32	54	35.1
No	104	68	100	64.9

Table 2.3: Source of professional help for those who sought help for mental health problems

Source of help for mental health issues	**Previous help (N = 75):**		**Current help (N = 62):**	
	n	**%**	**n**	**%**
GP	58	37.4	46	36.8
Psychiatrist	17	11	21	16.8
CPN	28	18.1	11	8.8
Psychological Services	26	16.8	24	19.2
A Specialist Veteran Service	20	12.9	19	15.2
Voluntary Sector/Charity Organisation	2	1.3	1	0.8
Other	4	2.6	3	2.4

Measures of descriptive statistics

Descriptive statistics are presented in Table 2.4. The mean CORE-10 score of 15.97 was above the clinical cut-off range for mild (11) and moderate (15) distress within the sample (Connell & Barkham, 2007). 64% of participants scored within the clinical cut-off range for psychological distress. Even though no cut-off points exist for the remaining measures, participants tended to score on the lower half of adjustment difficulty, stigma and self-stigma issues and experiential avoidance; and on the upper half of quality of life, attitude and likelihood of help-seeking, reappraisal and suppression.

Table 2.4: Descriptive statistics for all variables (N = 154)

Measure	**Mean/ possible total score**	**SD**
M2C-Q – Total	23.9/64	16.5
M2C-Q additional item: Overall, how difficult have you found readjusting to civilian life?	2.32/4	1.4
EUROHIS-QOL – Total	23.43/40	7.38
CORE-10 – Total	15.97/40	10.17
Seeking help for a psychological problem – attitude	2.83/4	.87
Seeking help for a psychological problem – likelihood	2.89/4	.95
SSRPH – Total	7.6/15	3.34
ISMI – Alienation – Total	11.3/24	8.25
ISMI – Stereotype – Total	10.35/28	5.68
ISMI – Discrimination – Total	7.34/20	6.00
ISMI – Social withdrawal – Total	10.01/24	7.62
ISMI – Stigma resistance – Total	8.57/20	4.88
AAQ-II – Total	24.86/49	12.55
ERQ – Reappraisal – Total	24.87/42	8.77
ERQ – Suppression – Total	17.40/28	5.61

Correlation analyses

Pearson's correlations were conducted to explore the relationships between the outcome variables (military to civilian adjustment difficulty and quality of life) and independent variables of mental health (as measured by the CORE-10); stigma; self-stigma; attitude towards seeking help; likelihood of seeking help; experiential avoidance; reappraisal; suppression; gender; whether the veteran had dependents; stability of living situation; whether the veteran was receiving benefits; whether the veteran served as a Regular or Reservist; combat or support role; officer or non-officer rank status; whether they served in conflicts between 2001 and 2016; whether they were currently suffering, or had previously suffered from mental health problems (self-

reported); current and previous prescribed medication status; and whether they had previously or were currently receiving support from a mental health professional.

Spearman's rho correlations were conducted to explore the relationships regarding ranked, categorical data which involved more than two categories. These included: age category; education category; number of tours; and length of time served in the Armed Forces.

Results of Pearson's and Spearman's rho correlations are summarised in Table 2.5. See Appendix H for full correlation tables. Results show that total adjustment difficulty to civilian life was significantly, positively correlated to current mental health problems (as measured by the CORE-10); self-stigma scores and experiential avoidance (large effects, r = .503 to .820); stigma; receiving benefits and suppression (medium effects, r = .358 to .453); stability of living situation and number of tours (small effects, r = .165 and .244)). Total adjustment difficulty to civilian life was significantly, negatively correlated with self-report of current mental health problems (large effect, r = -.652); currently taking prescribed medication; currently receiving help from a mental health professional and non/officer rank (medium effects, r = -.305 to 0.489); attitude towards seeking help; likelihood of seeking help; reappraisal; combat or support role and previously prescribed medication; age category and length of time served in the Armed Forces (small effects, r = -.186 to -.285). There was no statistically significant correlation between adjustment to civilian life and gender; whether the veterans had dependents or not; being a Regular or Reservist; serving in conflicts between 2001 and 2016; suffering from perceived mental health issues in the past; seeking help for mental health issues in the past and education category.

Results also showed that quality of life was significantly, positively correlated to perceived current mental health problems (as measured by self-report) (large effect, r = .534); attitude towards seeking help; currently taking prescribed medication and currently receiving help from a mental health professional (medium effects, r = .304 to .410); likelihood of seeking help; reappraisal; combat or support role; taking prescribed medication in the past; non/officer rank and length of time served (small effects, r = .204 to .248). Quality of life was significantly, negatively correlated to mental health problems (as measured by CORE-10); self-stigma; experiential

avoidance (large effects, r = -.789 to -.500); stigma; suppression and receiving benefits (medium effects, r = -.317 to -.486); and stability of living situation (small effect, r = -.264). There was no statistically significant relationship between quality of life and gender; whether the veterans had dependents, being a Regular or Reservist; serving in conflicts between 2001 and 2016; suffering from perceived mental health issues in the past; seeking help for mental health issues in the past; age category; education category and number of tours.

One-way ANOVAS were conducted to explore whether there were significant differences for categorical data that was non-ranked. These included marital status; employment status; military branch; and reason for leaving the military. Homogeneity of variance was tested by Levene's statistic and Welch's test of equality of means (Field, 2013). Results showed no statistically significant difference between groups for marital status and the outcome variables, adjustment difficulties to civilian life ($F(4, 149) = .65$, $p = .63$) and quality of life ($F(4, 149) = 1.34$, $p = .26$). There was a significant difference between groups for employment status and adjustment difficulties to civilian life (Welch's $F(7, 146) = 6.95$, $p = .000$) and for quality of life ($F(7, 146) = 6.35$, $p = .000$). There was a significant difference between groups for military branch (e.g. army, navy, air force, marines) and adjustment difficulties to civilian life ($F(3, 150) = 3.25$, $p = .024$). There was no significant difference between groups for military branch and quality of life ($F(3, 150) = 1.78$, $p = .15$). There was a significant difference between groups for reason for leaving and adjustment difficulties to civilian life ($F(4, 148) = 4.52$, $p = .002$) and quality of life ($F(4, 148) = 3.85$, $p = .005$).

Table 2.5: Pearson's (N = 137) and Spearman's rho (N = 152) correlations (r) for the outcome variables with 95% bias corrected and accelerated confidence intervals. Confidence intervals based on 1000 bootstrap intervals

			Total M2C-Q	EUROHIS -QoL
Current mental health - CORE-10	Pearson Correlation		.828**	-.789**
	BCa 95% Confidence Interval	Lower	.775	-.846
		Upper	.874	-.722
Stigma	Pearson Correlation		.450**	-.414**
	BCa 95% Confidence Interval	Lower	.314	-.540
		Upper	.574	-.290
Self-stigma - Alienation	Pearson Correlation		.703**	-.583**
	BCa 95% Confidence Interval	Lower	.626	-.680
		Upper	.775	-.466

Self-stigma - Stereotype endorsement	Pearson Correlation		.682**	-.603**
	BCa 95% Confidence Interval	Lower	.573	-.696
		Upper	.771	-.486
Self-stigma - Discrimination experience	Pearson Correlation		.639**	-.563**
	BCa 95% Confidence Interval	Lower	.525	-.660
		Upper	.731	-.446
Self-stigma - Social withdrawal	Pearson Correlation		.673**	-.568**
	BCa 95% Confidence Interval	Lower	.572	-.681
		Upper	.764	-.443
Self-stigma - Stigma Resistance	Pearson Correlation		.503**	-.458**
	BCa 95% Confidence Interval	Lower	.352	-.615
		Upper	.638	-.282
Attitude toward seeking help	Pearson Correlation		-.285**	.304**
	BCa 95% Confidence Interval	Lower	-.446	.140
		Upper	-.117	.441
Likelihood of seeking help	Pearson Correlation		-.271**	.204*
	BCa 95% Confidence Interval	Lower	-.417	.044
		Upper	-.115	.364
AAQ-II	Pearson Correlation		.820**	-.725**
	BCa 95% Confidence Interval	Lower	.765	-.794
		Upper	.868	-.651
Reappraisal	Pearson Correlation		-.203*	.210*
	BCa 95% Confidence Interval	Lower	-.364	.042
		Upper	-.040	.379
Suppression	Pearson Correlation		.358**	-.317**
	BCa 95% Confidence Interval	Lower	.187	-.478
		Upper	.509	-.156
Gender	Pearson Correlation		-.092	.140
	BCa 95% Confidence Interval	Lower	-.267	-.032
		Upper	.085	.292
Dependents	Pearson Correlation		-.046	.023
	BCa 95% Confidence Interval	Lower	-.225	-.149
		Upper	.145	.181
Stability of living situation	Pearson Correlation		.165	-.264**
	BCa 95% Confidence Interval	Lower	.006	-.405
		Upper	.302	-.107
Benefits status	Pearson Correlation		.453**	-.486**
	BCa 95% Confidence Interval	Lower	.308	-.600
		Upper	.585	-.353
Regulars or Reserves	Pearson Correlation		-.043	.069
	BCa 95% Confidence Interval	Lower	-.244	-.148
		Upper	.135	.315
Combat or support role	Pearson Correlation		-.281**	.232**
	BCa 95% Confidence Interval	Lower	-.434	.056
		Upper	-.112	.379
Served in conflicts between 2001 and 2016	Pearson Correlation		-.064	.025
	BCa 95% Confidence Interval	Lower	-.249	-.158
		Upper	.114	.207
Current mental health issues	Pearson Correlation		-.652**	.534**
	BCa 95% Confidence Interval	Lower	-.748	.422
		Upper	-.536	.642
Current prescription for mental health issues	Pearson Correlation		-.489**	.410**
	BCa 95% Confidence Interval	Lower	-.618	.267
		Upper	-.348	.538
Current help from mental health professional	Pearson Correlation		-.383**	.396**
	BCa 95% Confidence Interval	Lower	-.519	.249
		Upper	-.230	.516
Previous mental health issues	Pearson Correlation		-.115	.116
	BCa	Lower	-.278	-.055

	95% Confidence Interval	Upper	.044	.288
Previous prescription for mental health issues	Pearson Correlation		-.186*	.248**
	BCa	Lower	-.341	.095
	95% Confidence Interval	Upper	-.028	.404
Sought help in the past for mental health problems	Pearson Correlation		.159	-.090
	BCa	Lower	-.013	-.260
	95% Confidence Interval	Upper	.325	.078
Not Officer/Officer and above	Pearson Correlation		-.305**	.244**
	BCa	Lower	-.453	.072
	95% Confidence Interval	Upper	-.132	.382
Age category●	Correlation Coefficient		-.229**	.146
	BCa	Lower	-.375	-.007
	95% Confidence Interval	Upper	-.069	.311
Education category●	Correlation Coefficient		-.107	.142
	BCa	Lower	-.275	.002
	95% Confidence Interval	Upper	.065	.279
Number of tours●	Correlation Coefficient		.224**	-.168*
	BCa	Lower	.069	-.324
	95% Confidence Interval	Upper	.359	.002
Length of time served●	Correlation Coefficient		-.282**	.228**
	BCa	Lower	-.417	.060
	95% Confidence Interval	Upper	-.144	.390

● Spearman's rho correlation. *p < .05 **p < .01

Regression analyses

Veteran adjustment difficulty to civilian life

A hierarchical multiple regression was run to determine if the addition of current mental health and then of previous and current mental health input, attitude towards seeking help and likelihood of seeking help, and then of stigma and self-stigma and then of experiential avoidance, reappraisal and suppression improved the prediction of veteran adjustment difficulty to civilian life over and above demographic information alone. See Tables 2.6 for full details of the regression model.

Model 1 was statistically significant (R^2 = .290, F(6, 142) = 9.664, p< .001). The addition of current mental health to the prediction of veteran adjustment difficulty (Model 2) led to a statistically significant increase in R^2 of .446, F(2, 140) = 118.338, p< .001, predicting 72% of the variance. However, the addition of likelihood of seeking help, attitude towards seeking help, previous and current prescribed medication for mental health issues and currently receiving help from a mental health professional (Model 3) did not lead to a statistically significant change in R^2 (ΔR^2 = .010, F(5, 135) = 1.030, p = .402), indicating that this third set of predictors did not predict veteran adjustment difficulty. Likewise, the addition of stigma and self-stigma (Model 4) did not lead to a statistically significant change in R^2 (ΔR^2 = .019, F(6, 129)

= 1.776, p = .109), indicating that stigma and self-stigma did not contribute to the variance or predict veteran adjustment difficulty. However, the addition of emotion regulation (experiential avoidance, reappraisal and suppression) to the prediction of veteran adjustment difficulty (Model 5) did lead to a statistically significant increase in R^2 of .024, $F(3, 126) = 4.825$, $p = .003$, predicting 75% of the variance. The change in the variance can be attributed to the addition of experiential avoidance, reappraisal and suppression. The results show that current mental health (as measured by the CORE-10) (b = .736 [.42, 1.06], p = .001), experiential avoidance (b = .345 [.089, .618], p = .003) and reappraisal (b = -.193 [- .388, - .027], p = .042) are statistically significant predictors of veteran adjustment difficulty to civilian life.

Table 2.6: Hierarchical multiple regression model of predictors of veteran adjustment difficulties to civilian life, with 95% bias corrected and accelerated confidence intervals. Confidence intervals and standard errors based on 1000 bootstrap intervals

Model	B	Std. Error	Beta	Sig. (2-tailed)	BCa 95% Confidence Interval	
					Lower	Upper
Model 1						
(Constant)	26.511	7.499		.001	12.475	41.239
Stability of living situation	4.663	3.846	.093	.212	-2.586	12.517
Benefits status	12.955	2.955	.372	.001	7.007	18.527
Combat or support role	-4.113	2.501	-.123	.097	-9.326	1.331
Age	-1.218	1.697	-.068	.476	-4.574	2.163
Years served in military	-1.054	1.072	-.104	.340	-3.169	.917
Number of tours	.995	.758	.097	.183	-.611	2.889
R^2 = .290 F = 9.664 (p = .000) ΔR^2 = .290 ΔF = 9.664 (p = .000)						
Model 2						
(Constant)	11.485	7.272		.114	-2.036	23.299
Stability of living situation	1.533	2.590	.031	.538	-4.242	6.910
Benefits status	4.000	1.796	.115	.027	.574	7.209
Combat or support role	-.593	1.569	-.018	.704	-3.467	2.558
Age	-1.079	.988	-.061	.292	-3.107	.988
Years served in military	.675	.593	.067	.263	-.428	1.676
Number of tours	.779	.585	.076	.187	-.383	2.126
Current mental health - CORE-10	1.094	.117	.669	.001	.851	1.364
Current mental health issues (self-report)	-5.246	2.613	-.157	.044	-11.187	.260
R^2 = .736 F = 48.810 (p = .000) ΔR^2 = .446 ΔF = 118.338 (p = .000)						
Model 3						
(Constant)	19.621	10.288		.062	.506	38.857

Stability of living situation	1.111	2.713	.022	.674	-5.232	7.122
Benefits status	3.772	1.951	.108	.066	-.062	7.388
Combat or support role	-.432	1.592	-.013	.799	-3.495	2.808
Age	-1.026	.960	-.058	.280	-2.831	.875
Years served in military	.689	.613	.068	.255	-.436	1.760
Number of tours	.785	.582	.076	.170	-.406	2.063
Current mental health - CORE-10	1.033	.128	.632	.001	.771	1.300
Current mental health issues	-4.163	3.494	-.125	.228	-11.528	3.088
Current prescription for mental health issues	-3.772	2.447	-.108	.112	-8.607	1.281
Previous prescription for mental health issues	.504	1.756	.014	.773	-3.115	4.244
Current help from a mental health professional	.363	2.500	.010	.871	-4.503	5.413
Attitude toward seeking help	-1.119	1.352	-.058	.409	-3.922	1.286
Likelihood of seeking help	-.285	1.182	-.016	.800	-2.495	2.100
R^2 = .746						
F = 30.466 (p = .000)						
ΔR^2 = .010						
ΔF = 1.030 (p = .402)						
Model 4						
(Constant)	3.786	11.380		.740	-17.218	26.085
Stability of living situation	.765	2.774	.015	.789	-5.472	6.340
Benefits status	3.041	1.982	.087	.125	-.680	6.710
Combat or support role	-.019	1.745	-.001	.997	-3.544	3.749
Age	-.881	1.026	-.050	.377	-2.916	1.365
Years served in military	.699	.609	.069	.245	-.365	1.756
Number of tours	.810	.564	.079	.144	-.261	2.018
Current mental health - CORE-10	.968	.134	.592	.001	.701	1.270
Current mental health issues (self-report)	-.659	3.729	-.020	.888	-8.406	5.678
Current prescription for mental health issues	-2.900	2.414	-.083	.225	-7.774	1.738
Previous prescription for mental health issues	1.424	1.905	.040	.443	-2.543	5.254
Current help from a mental health professional	.707	2.540	.019	.776	-3.885	6.017
Attitude toward seeking help	-.597	1.330	-.031	.648	-3.568	1.920
Likelihood of seeking help	-.368	1.313	-.021	.768	-2.757	2.210
Stigma	-.066	.290	-.013	.834	-.633	.490
Self-stigma - Alienation	.053	.276	.026	.817	-.569	.576
Self-stigma -Stereotype endorsement	.487	.322	.165	.124	-.138	1.154
Self-stigma - Discrimination experience	.197	.257	.071	.435	-.299	.703
Self-stigma - Social withdrawal	-.006	.269	-.003	.980	-.491	.475
Self-stigma - Stigma resistance	-.039	.244	-.012	.891	-.537	.368
R^2 = .765						
F = 22.125 (p = .000)						
ΔR^2 = .019						
ΔF = 1.776 (p = .109)						
Model 5						
(Constant)	-6.572	11.740		.573	-28.544	15.265
Stability of living situation	.414	2.639	.008	.868	-5.066	5.192
Benefits status	1.935	2.089	.056	.337	-1.790	5.744
Combat or support role	-.025	1.665	-.001	.984	-3.405	3.325
Age	-.496	1.052	-.028	.653	-2.806	1.817
Years served in military	.350	.623	.035	.588	-.734	1.453
Number of tours	.741	.535	.072	.164	-.328	1.890
Current mental health (CORE-10)	.736	.157	.450	.001	**.420**	**1.060**
Current mental health issues (self-report)	1.285	3.359	.039	.710	-6.091	7.469
Current prescription for mental health issues	-2.616	2.380	-.075	.277	-7.643	1.896
Previous prescription for mental health issues	1.520	1.899	.042	.415	-2.579	5.656
Current help from a mental health professional	1.631	2.654	.043	.529	-3.406	7.162
Attitude toward seeking help	.309	1.340	.016	.791	-2.582	2.791

Likelihood of seeking help	-.140	1.307	-.008	.914	-2.466	2.318
Stigma	-.340	.308	-.067	.286	-.902	.245
Self-stigma - Alienation	.113	.258	.056	.656	-.522	.623
Self-stigma -Stereotype endorsement	.379	.315	.129	.218	-.223	1.021
Self-stigma - Discrimination experience	.176	.255	.063	.471	-.290	.636
Self-stigma - Social withdrawal	-.115	.278	-.053	.682	-.663	.421
Self-stigma - Stigma resistance	.097	.263	.029	.714	-.410	.513
Experiential avoidance	.345	.125	.261	.003	**.089**	**.618**
Reappraisal	-.193	.092	-.101	.042	**-.388**	**-.027**
Suppression	.316	.182	.106	.090	-.032	.697

R^2 = .789
F = 21.466 (p = .000)
ΔR^2 = .024
ΔF = 4.825 (p = .003)

Veteran quality of life

A hierarchical multiple regression was run to determine if the addition of current mental health and then of previous and current mental health input,, attitude towards seeking help and likelihood of seeking help, and then of stigma and self-stigma and then of experiential avoidance, reappraisal and suppression improved the prediction of veteran quality of life over and above demographic variables alone. See Table 2.7 for full details of the regression model.

Model 1 was statistically significant (R^2 = .286, F(4, 145) = 14.552, p< .001). The addition of current mental health (Model 2) to the prediction of veteran quality of life led to a statistically significant increase in R^2 of .362, F(2, 143) = 73.776, p< .001), predicting 63% of the variance. However, the change in R^2 was not statistically significant following the addition of likelihood of seeking help, attitude towards seeking help, previous and current prescribed medication for mental health issues and currently receiving help from a mental health professional (Model 3) (ΔR^2 = .024, F(5, 138) = 2.048, p = .076). This indicated that this third set of predictors did not predict veteran quality of life. Likewise, the addition of stigma and self-stigma (Model 4) did not lead to a statistically significant change in R^2 (ΔR^2 = .016, F(6, 132) = 1.158, p = .333) and neither did the addition of emotion regulation (Model 5) (ΔR^2 = .011, F(3, 129) p = .198), indicating that both stigma and emotion regulation predictors did not predict veteran quality of life. The results show that Model 2 best fitted the data (R^2 = .649, F(6, 143)= 44.031, p = .000; adjusted R^2 = .634), indicating that current mental health is a statistically significant predictor of veteran quality of life over and above

demographic variables alone. Based on Model 2 results, current mental health (as measured by the CORE-10) (*b* = .498 [- .594, - .393], p = .001) and financial benefits status (*b* = - 2.737 [- 4.843, - .633], p = .012) were significant predictors of veteran quality of life.

Table 2.7: Hierarchical multiple regression model of predictors of veteran quality of life, with 95% bias corrected and accelerated confidence intervals. Confidence intervals and standard errors based on 1000 bootstrap intervals

Model	B	Std. Error	Beta	Sig. (2-tailed)	BCa 95% Confidence Interval	
					Lower	Upper
Model 1						
(Constant)	26.036	2.684		.001	20.973	31.532
Stability of living situation	-3.662	1.394	-.163	.008	-6.583	-1.086
Benefits status	-6.355	1.235	-.408	.001	-8.620	-4.048
Combat or support role	1.843	1.067	.123	.085	-.178	3.727
Years served in military	.235	.346	.052	.516	-.482	.991
R^2 = .286 F = 14.552 (p = .000) ΔR^2 = .286 ΔF = 14.552 (p = .000)						
Model 2						
(Constant)	34.989	2.678		.001	29.185	40.645
Stability of living situation	-2.204	1.240	-.098	.076	-4.427	.135
Benefits status	-2.737	1.033	-.176	.012	**-4.843**	**-.633**
Combat or support role	.473	.746	.032	.515	-.998	1.955
Years served in military	-.415	.221	-.092	.064	-.857	.057
Current mental health - CORE-10	-.498	.049	-.680	.001	**-.594**	**-.393**
Current mental health issues (self-report)	.471	.878	.032	.595	-1.173	2.117
R^2 = .649 F = 44.031 (p = .000) ΔR^2 = .362 ΔF = 73.776 (p = .000)						
Model 3						
(Constant)	26.763	5.533		.001	15.312	37.551
Stability of living situation	-1.516	1.339	-.068	.266	-3.845	.772
Benefits status	-2.087	1.035	-.134	.039	-4.264	.073
Combat or support role	.845	.800	.057	.299	-.623	2.395
Years served in military	-.292	.217	-.065	.183	-.693	.149
Current mental health – CORE-10	-.488	.058	-.666	.001	-.598	-.369
Current mental health issues (self-report)	-.996	1.378	-.067	.474	-3.629	1.540
Current prescription for mental health issues	.545	1.094	.035	.610	-1.548	2.808
Previous prescription for mental health issues	2.004	.881	.125	.032	.328	3.605
Current help from mental health professional	1.453	1.165	.086	.222	-.993	3.844
Attitude toward seeking help	1.162	.736	.133	.110	-.265	2.746
Likelihood of seeking help	-.636	.669	-.081	.321	-2.027	.652
R^2 = .673 F = 25.827 (p = .000) ΔR^2 = .024						

ΔF = 2.048 (p = .076)						
Model 4						
(Constant)	31.499	6.198		.001	18.302	42.640
Stability of living situation	-1.436	1.301	-.064	.257	-3.816	.915
Benefits status	-1.976	1.013	-.127	.046	-4.046	.084
Combat or support role	.573	.833	.038	.502	-1.029	2.205
Years served in military	-.319	.226	-.071	.159	-.797	.119
Current mental health – CORE-10	-.479	.067	-.653	.001	-.607	-.352
Current mental health issues (self-report)	-1.489	1.523	-.100	.326	-4.359	1.624
Current prescription for mental health issues	.568	1.145	.036	.624	-1.593	2.838
Previous prescription for mental health issues	1.870	.945	.117	.059	.094	3.580
Current help from mental health professional	1.295	1.157	.077	.285	-1.037	3.726
Attitude toward seeking help	.933	.717	.107	.190	-.412	2.349
Likelihood of seeking help	-.746	.663	-.095	.254	-2.061	.536
Stigma	-.100	.163	-.044	.540	-.407	.252
Self-stigma - Alienation	.125	.110	.138	.260	-.064	.291
Self-stigma -Stereotype endorsement	-.304	.136	-.232	.027	-.543	.007
Self-stigma - Discrimination experience	-.071	.124	-.057	.550	-.323	.174
Self-stigma - Social withdrawal	.074	.127	.076	.557	-.204	.388
Self-stigma - Stigma resistance	-.006	.124	-.004	.967	-.257	.223
R^2 = .689 F = 17.235 (p = .000) ΔR^2 = .016 ΔF = 1.158 (p = .333)						
Model 5						
(Constant)	34.396	6.558		.001	21.390	46.707
Stability of living situation	-1.352	1.362	-.060	.306	-3.860	1.306
Benefit status	-1.640	1.095	-.105	.132	-4.031	.743
Combat or support role	.556	.847	.037	.521	-1.120	2.370
Years served in military	-.260	.238	-.057	.280	-.752	.185
Current mental health – CORE-10	-.411	.077	-.561	.001	-.563	-.264
Current mental health issues (self-report)	-2.025	1.488	-.136	.175	-4.747	.787
Current prescription for mental health issues	.503	1.171	.032	.695	-1.700	2.918
Previous prescription for mental health issues	1.787	.946	.112	.068	-.039	3.443
Current help from mental health professional	.946	1.191	.056	.443	-1.528	3.339
Attitude toward seeking help	.667	.745	.076	.372	-.700	2.140
Likelihood of seeking help	-.837	.674	-.107	.219	-2.175	.535
Stigma	-.021	.174	-.009	.904	-.388	.373
Self-stigma - Alienation	.110	.115	.121	.345	-.087	.286
Self-stigma - Stereotype endorsement	-.269	.142	-.205	.057	-.520	.054
Self-stigma - Discrimination experience	-.062	.125	-.050	.613	-.316	.159
Self-stigma - Social withdrawal	.101	.131	.103	.435	-.180	.422
Self-stigma - Stigma Resistance	-.043	.139	-.028	.741	-.327	.215
Experiential avoidance	-.106	.062	-.180	.103	-.228	.030
Reappraisal	.060	.051	.071	.216	-.040	.180
Suppression	-.081	.083	-.060	.346	-.240	.040
R^2 = .700 F = 15.078 (p = .000) ΔR^2 = .011 ΔF = 1.576 (p = .198)						

Mediation analyses

Based on the results of the hierarchical multiple regression analysis, significant variables were examined as potential mediators for veteran adjustment difficulty. Since the addition of stigma to the regression model was not statistically significant, this variable was not explored as a potential mediator. Multiple mediation analyses were conducted with adjustment difficulty to civilian life entered as the dependent variable, mental health (CORE-10) entered as the independent variable and experiential avoidance and reappraisal entered as the mediators. Both mediators were predicted by the independent variable: mental health significantly predicted experiential avoidance ($F(1, 152) = 267.06$, $p = .0000$) and reappraisal ($F(1, 152) = 5.45$, $p = .0209$). Mental health explained 64% of the variance in experiential avoidance and 3.5% of the variance in reappraisal. Results of the mediation analyses are presented in Table 2.8, showing the direct versus indirect effects of experiential avoidance and reappraisal on veteran adjustment difficulty to civilian life, with the individual contributions of the two mediators.

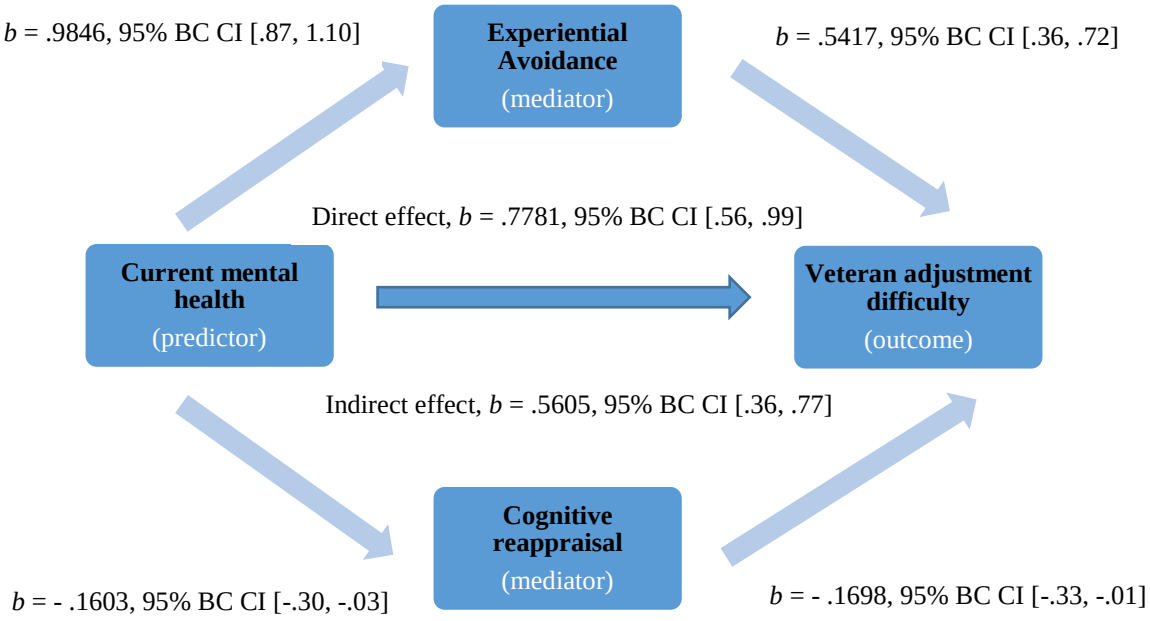
Table 2.8: Mediation analysis for veteran adjustment difficulties

	Beta	**Standard Error**	**95% BC CI**	
			Lower	**Upper**
Outcome: Adjustment difficulty				
Total effect	1.3386	.0743	1.1918	1.4855
Direct effect	.7781	.1119	.5570	.9992
Indirect effect	.5605	.1039	.3550	.7652
Individual mediators				
Experiential avoidance	.5333	.1034	.3355	.7417
Reappraisal	.0272	.0182	.0009	.0694

As all of the 95% bias corrected confidence intervals do not cross zero, the total, direct, indirect and individual effects are considered to be significant (Preacher & Hayes, 2008). Results show that the direct effect from both mediators to the outcome is significant when compared with the indirect effect accounted for by the mediators. The direct effect does not disappear in the presence of the indirect effect, and so both direct and indirect effects co-exist. Both of the direct and indirect paths are significant, which indicates that experiential avoidance and reappraisal partially mediate the relationship between mental health and veteran adjustment difficulty. This means that the effect of mental health problems on adjustment partially depends on how accepting veterans are of their uncomfortable thoughts, feelings and memories, or how much they engage

with reappraising these internal experiences. However, experiential avoidance appears to be a stronger mediator than reappraisal and adjustment difficulty is better predicted with the influence of mental health. Results also showed that the introduction of mediators helped the model account for more variance (68% to 75%) in veteran adjustment difficulty to civilian life. *Figure 2.3* represents the model diagrammatically.

Figure 2.3: Model of current mental health as a predictor of veteran adjustment difficulty, mediated by experiential avoidance and cognitive reappraisal



2.5 Discussion

The aim of this study was to explore the influence of psychosocial factors on veteran adjustment difficulty to civilian life and quality of life and to provide an empirically informed analysis of predictors of these variables.

In line with previous evidence reporting that most veterans have a successful transition into civilian life (Lord Ashcroft KCMG PC, 2014), the mean adjustment difficulty score in this study demonstrated that most veterans were adjusting well enough, with "some" difficulties in overall adjustment. However, as with previous research, there was a minority of participants who indicated extreme adjustment difficulties, scoring almost the full range of points on the MC2-Q. Relatively speaking, the mean quality of life score was not particularly high, perhaps suggesting that the impact of

experiencing even *some* transition difficulties results in an unremarkable (or a neither poor nor good) level of quality of life. Similarly, the mean current mental health score indicated moderate, clinical levels of psychological distress, suggesting that adjustment difficulties, quality of life and mental health are related. 64% of participants' mental health CORE-10 score fell within the clinical cut-off range and the mean score (16) for this sample was comparable with normative data for a sample presenting at primary care counselling services (mean score = 19.7), but was much higher than normative data for the general population (mean score = 4.7) (Connell & Barkham, 2007). Current mental ill-health was strongly, positively correlated to adjustment difficulty, indicating that as mental health difficulties increased, so did adjustment difficulties. The correlation between mental health and quality of life was also strong, in the negative direction, indicating that quality of life reduced as adjustment difficulty increased. These results support the hypotheses and previous literature that worse mental health is associated with re-integration difficulties (Adler et al., 2011; Sayer et al., 2011) and poorer quality of life (Toomey et al., 2007), although due to the cross-sectional study design, it is not possible to ascertain causality.

Previous mental health issues and previous help-seeking had no significant effect on adjustment difficulty or quality of life. This result may have been due to the subjective, ambiguous nature of the question which did not specify when exactly in the past the potential mental health problems were experienced. It is also possible that these problems could have occurred earlier in life and had been resolved, or that they were completely independent of current civilian adjustment issues.

Adjustment difficulty and quality of life were both correlated between stigma, self-stigma scores, attitude towards help-seeking and likelihood or intention of seeking help in the expected directions. The mean attitude towards seeking help for a psychological problem was "positive", and the mean likelihood or intention of seeking help was "likely". It is possible that these results relate to the relatively low mean stigma and self-stigma scores which were also found. These results support a meta-analysis which found no association between stigma and help-seeking intentions (Sharp et al., 2015). It is possible that these results reflect a gradual shift in the way society (and military/veteran organisations) regard mental health and its treatment, which may be

due to various public mental health and anti-stigma campaigns, as well as specific military-related mental health campaigns (e.g. MoD's "Don't bottle it up" mental health stigma campaign). However, of the participants who said they had mental health problems, 46% were not seeking help from a mental health professional, which supports previous literature that found that 40% - 60% of those who could benefit from professional treatment do not seek help (Hoge et al., 2004; Iversen et al., 2011). It is an interesting finding, given that stigma levels were relatively low and that attitude towards help-seeking was generally fairly positive. It suggests that there are clearly other factors that contribute towards help-seeking. Of note, the results found that the most common, current source of help for mental health issues was the veteran's GP. Psychiatry, psychological services and specialist veteran services were collectively the next most common source of support. The question of whether the veterans also sought help from non-health professionals (e.g. chaplain, friends, families, colleagues) was not specifically asked, so professional and non-professional sources of help are unable to be compared.

Mean scores for experiential avoidance, reappraisal and suppression were not particularly high but were significantly correlated with adjustment difficulty and quality of life in the expected directions, supporting the hypothesis that greater use of more adaptive emotion regulation strategies in veterans is associated with greater adjustment to civilian life. In particular, there was a large effect with experiential avoidance, demonstrating that as veterans were more experientially avoidant, their adjustment difficulty increased and their quality of life reduced. There was a smaller but statistically significant effect on reappraisal and suppression. For example, veterans' adjustment difficulties reduced with the increase of reappraisal strategies and reduction of suppression. These results support Adler et al. (2011), who suggest that emotion regulation difficulties may make adjustment to civilian life particularly difficult.

The regression models answered the primary research question regarding which psychosocial factors predicted veteran adjustment difficulty to civilian life and quality of life. There was a limited model for predicting quality of life, indicating that veterans with mental health difficulties and veterans who receive benefits are likely to have a poorer quality of life. This makes theoretical sense, and supports previous veteran

literature regarding financial difficulties of coping with civilian life (Lord Ashcroft KCMG PC, 2014). Current mental health, experiential avoidance and reappraisal were found to be the only statistically significant predictors of veteran adjustment difficulty. This suggests therefore, that veterans who have mental health problems and veterans who are unwilling or unable to remain in contact with difficult thoughts, memories, emotions or physical sensations, and who try to avoid, change or alter these experiences (i.e. experiential avoidance) (Hayes et al., 1996) are likely to have a difficult adjustment to civilian life. Veterans who try to change aversive events by changing the way they evaluate them (i.e. reappraisal) (Kashdan, Barrios, Forsyth, & Steger, 2006) as a way of regulating (or coping) with their emotions or with difficult events are likely to have a better adjustment to civilian life.

Mediation analysis revealed that experiential avoidance and reappraisal were partial mediators between mental health and adjustment difficulty, with experiential avoidance more strongly mediating the relationship than reappraisal. This result draws parallels on a study by Kashdan et al. (2006), which examined experiential avoidance as a psychological vulnerability and made comparisons with coping and emotion regulation strategies. It found that cognitive reappraisal was much less predictive of the quality of psychological experiences and events in everyday life, compared with experiential avoidance. Results of this study suggest that it is the severity of the mental health symptoms and the way veterans react to them (experientially avoiding or reappraising them), that has the greatest impact on how well they adjust to the transition from military to civilian life. This relates to acceptance and commitment therapy (ACT) theory, which posits that it is the way an individual deals with difficult experiences (for example, by accepting or not accepting them) that makes the most difference in influencing behaviour and wellbeing, rather than the content and quality of other experiences (Hayes, Strosahl, & Wilson, 1999). In a veteran context, being able to flexibly adapt to the challenges and demands of transitioning to civilian life and being able to work towards values-based goals (e.g. employment, financial security, maintaining heathy relationships, overcoming mental health problems) might be particularly difficult if the individual makes deliberate efforts to avoid, control or escape from these difficult inner experiences. Whilst strategies such as experiential avoidance may have been adaptive in a combat environment or the accepted norm in a military occupational setting, these results show that as a civilian with mental health

problems, being able to reappraise and accept (rather than avoid) difficult situations, thoughts and feelings, is likely to be more adaptive and contribute to a better transition. These results have important implications for military transition and mental health services, and are discussed below.

The findings of this study also provide some preliminary support for military transition theory (Castro & Kintzle, 2016), a new theoretical framework which identifies three phases (approaching, managing and assessing the military transition) and key challenges and moments of the transition process. The model posits that some factors that may affect transition are personal characteristics such as mental health, individual adjustment factors such as coping style, and military transition management, such as benefits. These factors have been identified in this research as playing a role in veteran transition to civilian life in Scotland; in particular the study has been able to explore specific coping or emotion regulation strategies.

Strengths and limitations

As with all empirical research, the findings should be considered in the context of methodological limitations. First, the study was cross-sectional, and therefore conclusions regarding causation cannot be made. For example, it is difficult to ascertain whether the adjustment difficulties were due to mental health problems, or whether the mental health problems were due to adjustment difficulties. Longitudinal study designs that measure relevant factors before the individual has begun military training would perhaps help to address this question and explore whether alternative models or unobserved variables can also explain the relationships. Indeed, some participants in the study left the military as long as 15 years ago, and there may well be other factors that are unrelated to the variables in this study that influenced their transition to civilian life and their quality of life.

A second limitation relates to the reliance of subjective, self-report measures, which may have affected the size and reliability of associations between variables, despite the measures being deemed valid and reliable for this population and chronbach's alphas calculated. For example, there was discrepancy between the number of participants who reported that they had sought help for mental health problems and those who reported actually *having* a mental health problem. A limitation of the M2C-

Q was that it was designed specifically for US veterans who served in Operation Enduring Freedom (Afghanistan) and Operation Iraqi Freedom (Iraq war). Sayer et al. (2011) suggest that it may not fully assess re-integration difficulties of importance to other veteran groups and of other military service eras and that more research is required to examine its psychometric properties in other veteran samples. However, given the general lack of quantitative veteran transition measures (Adler et al., 2011), the M2C-Q was deemed an appropriate and applicable tool to measure re-integration difficulties for this study.

A third limitation was the sample size and power. The total sample that was used was slightly smaller than the *a-priori* calculation; however, the use of bootstrapping allowed for a more robust exploration of the data (Field, 2013).

A fourth limitation relates to the fact that the variables examined in the mediation analysis were selected *post-hoc*, rather than selected *a-priori* and based on other data or theory. The results should therefore be interpreted with a degree of caution, as there is a risk that *post-hoc* analyses find significant effects when none exist and can be considered to be biased and "data-dredging". However, given the exploratory nature of the study, *post-hoc* analysis was deemed acceptable.

One must also consider the generalisability of the findings. Whilst it could be argued that only more motivated veterans completed the questionnaires, participants were recruited from a wide range of settings, including specialist veteran services where some participants were suffering from mental health problems and therefore also likely motivational difficulties. Participants were also recruited from non-health sources, such as general veteran organisations and charities, as well as the Scottish Prison Service. The risk of recruitment bias from participants who had access to the internet was minimised by also widely distributing paper versions of the questionnaires across Scotland. However, having the option to participate in the research via the internet was a strength of the study, as anecdotally this was perceived to be a straight-forward and preferred way to take part and was easily accessible to those who were not necessarily affiliated to a specific veteran service. The study was also widely shared across various veteran social media sites and email groups. Geographically, veterans were recruited from across the whole of Scotland, from both rural and urban areas, although to further

protect anonymity, post-codes were not collected, and therefore the study was not able to measure the differences between rural and urban re-integration difficulties. Generalisability of the sample was limited with respect to there being relatively fewer Reservists, Early Service Leavers, lower ranked veterans, veterans in custody and female veterans, despite efforts to recruit across all of these characteristics.

The study also had a number of strengths, namely that it aimed to add to the Scottish and UK veteran transition literature. Little research has measured veteran re-integration using a quantitative measure of specific military adjustment; instead most studies assess adjustment by related measures such as quality of life. Furthermore, to the researcher's knowledge, the military adjustment measure has not yet been used within a UK or Scottish veteran population and the relationship between experiential avoidance, emotion regulation and veteran reintegration has not yet been researched. Indeed, there is a dearth of research from the service member's perspective on the process of psychologically adjusting from living in an operational combat zone to living at home (Adler et al., 2011). There also appears to be a lack of psychological research in the Scottish veteran population, with the vast majority of military research focused in the US or in England for a UK-wide veteran population. Due to the devolved government and socio-cultural, political and geographical differences, health and social services operate differently in Scotland and there are different opportunities and veteran support services available, which may have an impact on veterans' adjustment. Indeed, according to the Scottish Veterans Commissioner, there is a need for a Scottish perspective on veteran transition and for the challenges faced by veterans who settle in Scotland to be addressed (Scottish Government, 2015). This study aimed to address these gaps, as well as meet the need for further veteran transition research and support, as highlighted in Scottish Government reports on veteran issues, including *Transition in Scotland* (Scottish Government, 2015), *Our Commitments* (Scottish Government, 2012b) and Commitment 34 of the *Mental Health Strategy* (Scottish Government, 2012a).

Implications

The findings of this study have helped to improve our understanding of why some veterans find it hard to cope with civilian life, which has implications at both an individual and service level. This evidence can help to inform and improve the support

that veteran transition services (for example, those provided by the Ministry of Defence), specialist veteran services and general mental health services provide for veterans, both in terms of education and training, and in psychological treatment. This could include: educating veterans as they leave the Armed Forces (and the professionals involved with their transition and health-care) about the factors (e.g. mental health, experiential avoidance and reappraisal) which are likely to influence how well they re-integrate; early assessment of these factors (e.g. mental ill-health and experiential avoidance tendencies); providing training sessions in specific skills, such as psychological well-being, acceptance and reappraisal skills; and tailoring the focus of psychological assessments and interventions accordingly. In addition, it might be helpful to consider interventions that have more of an emphasis on ACT approaches, rather than reappraisal (a component of CBT), given that experiential avoidance was shown to be more predictive in adjustment difficulty than reappraisal. It would also be crucial to target GPs in training, given that this study revealed that most veterans seek support from their GP. A quick screening of mental health and experiential avoidance may flag up those veterans who are particularly vulnerable to a difficult transition and potentially in need of specialist support. Providing appropriate education, early assessment and relevant skills-training could potentially reduce the need for future, higher level, more complex psychological interventions, and thus reduce NHS waiting lists and financial costs. Moreover, it may have a significant impact on the individual, contributing to an improved transition to civilian life, improved functioning, quality of life, relationships and re-integration into the community. Given the recent findings from the veteran mental health charity, Combat Stress, which reported that it takes veterans accessing their service in Scotland on average 11 years to seek help after leaving the military (Murphy, Palmer, & Ashwick, 2017) (perhaps, one could argue, due in part to experiential avoidance of difficult internal experiences, which impacts their help-seeking), it is essential that service-leavers are educated about potential transition difficulties and how to manage and cope with them as early into their transition as possible, if not before.

The findings of the study also have potential implications for veterans' increased engagement with services: if professionals working with veterans better understand the various issues that veterans face when transitioning to civilian life (such as mental health and reluctance to get in touch with uncomfortable thoughts, memories and

feelings), their therapeutic relationship with the veterans may be further improved, which may have positive effects in terms of improved veteran engagement and more cost-effective services.

Further research would enhance the veteran transition literature in a number of ways. For example, research could specifically target the particularly vulnerable veteran population, such as Early Service Leavers and Reservists. As mentioned previously, this study did not explore differences in geographical location, but future research could examine differences in rural and urban re-integration, particularly as a recent Combat Stress report found that veterans living in Scotland are at greater risk of deprivation and that living in urban areas is likely to increase the risk of deprivation in help-seeking veterans (Murphy et al., 2017). In addition, it would be useful to recruit a more representative sample of veterans from across the military, including more veterans from the Royal Navy, Royal Air Force and Royal Marines. Recruiting more female veterans into veteran research, as well as more veterans in custody would also be beneficial.

Research could also examine the relationship between specific mental health disorders, such as PTSD, depression, anxiety and substance misuse, rather than a general measure of mental health distress, which was used in this study. Furthermore, researching the relationship between veteran reintegration and additional emotion regulation strategies used by veterans, such as problem-solving and rumination, as explored in a recent systematic review (chapter 1), might also add to the literature, as might a prospective study carried out over 10 years.

Future research could also examine non-military-related variables, such as exploring whether childhood traumatic experiences influence the transition from military to civilian life. Indeed, research has demonstrated that pre-enlistment vulnerability (in particular, family relationships reflecting the home environment and also externalising behaviours reflecting behavioural disturbance) is associated with ill-health (Iversen et al., 2007) and that childhood adversity is a significant predictor of veteran mental health symptoms, beyond the expected influence of combat (Cabrera, Hoge, Bliese, Castro, & Messer, 2007). One would hypothesise that pre-military vulnerability factors would relate to re-integration difficulties; however, research is needed in this area.

Conclusion

Veteran research can be a broad area to research with many factors to consider when exploring adjustment to civilian life. This study aimed to better understand the psychological mechanisms underpinning veteran transition issues in order for services to be able to better assist veterans. Results revealed a number of associated variables, but current mental ill-health, experiential avoidance and cognitive reappraisal were found to be predictors of veteran adjustment difficulty, with experiential avoidance and reappraisal partially mediating the relationship between mental health and adjustment, and experiential avoidance being a stronger mediator than reappraisal. The effect of mental health problems on adjustment therefore partially depends on how accepting veterans are of their uncomfortable thoughts, feelings and memories, or how much they engage with reappraising these internal experiences. These results have important implications, highlighting the need to educate and train appropriate veteran and health professionals in the reasons why some veterans do not have a successful transition, and solutions to overcome this. These results may therefore inform treatment plans for veterans who are struggling with re-integration, to improve their mental health and quality of life and to facilitate their adjustment from the military to civilian community.

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Appendices

Appendix A: Quality criteria checklist

Methodological Quality Criteria:

1. Representative population – recruitment

Were the subjects who were asked to participate in the study representative of the entire veteran population from which they were recruited?

2. Representative population – participants

Were those subjects who were prepared to participate representative of the entire veteran population from which they were recruited?

3. Generalisability of findings

Were the places and facilities where the participants were recruited from, representative of the treatment or facilities the majority of veterans receive?

4. Data dredging

If any of the results of the study were based on "data dredging", was this made clear?

5. Appropriate statistical tests

Were the statistical tests used to assess the main outcomes appropriate?

6. Adjustment for confounding variables

Was there adequate adjustment for confounding in the analyses from which the main findings were drawn?

7. Sample size and power

Did the study have sufficient power to detect a clinically important effect where the probability value for a difference being due to chance is less than 5%?

Appendix B: Full-text studies excluded from review – reason for exclusion

Reasons for exclusion (N = 194):

Treatment/intervention/experimental study (N = 60)
Substance misuse (N = 39)
No emotion regulation outcome measure used (N = 28)
Emotion regulation outcome measure did not meet definition for systematic review (N = 11)
Traumatic Brain Injury (N = 9)
Neurobiological/psychophysiological study (N = 9)
Physical disability or amputee (N = 8)
No outcome measures used (N = 6)
Relationship between emotion regulation and mental health not measured or reported (N = 5)
Physical health problem (N = 5)
No mental health outcome measure used (N = 4)
Pain (N = 4)
No veterans in study (N = 4)
Qualitative study (N = 2)

Appendix C.1: Patient Information Leaflet

Participant Information Leaflet

Study: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life

Researcher: Margaret Bowes, Trainee Clinical Psychologist

We would like to invite you to take part in our research study. Before you decide to join the study we would like you to understand why the research is being done and what it would involve for you. Please take the time to read the following information carefully and discuss it with others if you wish. If you are interested in taking part and have any questions about the study that are not answered in this information leaflet, please contact the researcher before you make your decision.

What is the purpose of the study?
This study will explore how our thoughts and feelings about our life influence how veterans adjust from military to civilian life. Specifically, we are interested in whether veteran's experiences and beliefs about mental health and the way they manage their thoughts and feelings affect how they adjust to civilian life. By understanding the relationships between these factors, it is hoped that researchers will know more about how to help veterans who are finding it difficult to cope with civilian life.

Who should participate in the study?
We are interested in the views and experiences of veterans (both Regular or Reserve ex-service personnel) who served in the Armed Forces from 2001 onwards and who left the Armed Forces between 2001 and 2016.

What will taking part involve?
If you agree to join the study you will be asked to complete a short questionnaire pack which asks you about your adjustment to civilian life, quality of life, emotional well-being, your views and experiences of mental health and mental health treatment and about how you manage thoughts and feelings. This will take approximately 20 - 30 minutes.

Do I have to take part?
No – it is completely up to you whether or not you would like to take part. You are free to not take part or to stop taking part at any point in the study, without giving a reason.

If you agree to take part, you should complete the questionnaire pack and return this using the stamped-addressed envelope. However, you can change your mind at any time by not returning the questionnaire, even if it is complete. You can also complete the questionnaire online, if you prefer. Simply follow this link: http://tinyurl.com/ozrofn6. After you have

submitted your responses by returning the questionnaire or by completing the online version, it will not be possible for you to withdraw from the study.

Completion and return of the survey implies that you have read the information in this form and consent to take part in the research.

What happens after I have taken part?
When you finish completing the questionnaire, you will be offered the choice to receive a summary of the study's findings that will be produced once the study is finished in April 2017.

Confidentiality
We will not ask you for any identifiable information. The data we collect from you during the study will be anonymised and your results from the study will therefore remain confidential.

What will happen to my data?
The data we collect from you during the study will be anonymised. If you complete the online version of the questionnaire, your data will also be anonymised. All electronic data will be stored on an encrypted (i.e. scrambled) format on an NHS computer for the duration of the study, and afterwards at the University of Edinburgh. The questionnaires will be destroyed once the study is finished in April 2017. The results from this study are likely to be published in scientific journals and used in presentations with the wider research, NHS and veteran service communities. The data may also be shared anonymously with other researchers to support further veteran research in the future. However, as we do not ask for identifiable information, the data will be anonymised and you will not be able to be identified.

To ensure that the study is being run correctly, responsible representatives from the Sponsor and NHS Institution may access your anonymous data collected during the study. This is usual practice to make sure that research is being carried out responsibly. The Sponsor is responsible for overall management of the study and for providing insurance and indemnity.

Are there any benefits or risks from choosing to participate in this study?
Your participation in this study will help us to better understand the factors which affect ex-service personnel in adjusting from military to civilian life. This could help to improve a better transition for service personnel leaving the military. It could also help to improve how we provide mental health services for veterans in the future.

It is possible that you may find some of the questions in this study upsetting, for example, we ask about mental health problems. However, the risk of this is thought to be low. We do not anticipate any other risks to participants. Sometimes our thoughts and feelings can overwhelm us, so if you do feel concerned that you are experiencing any distress, please contact your GP. You may also wish to contact the confidential helplines listed below if you feel you need listening and emotional support:

The Samaritans
24 hour support
Tel: 116 123
Email helpline: jo@samaritans.org

Website: http://www.samaritans.org/

Breathing Space
Monday-Thursday 6pm to 2am
Friday 6pm-Monday 6am
Tel: 0800 83 85 87
Website: http://www.breathingspace.scot/

Veterans First Point Scotland
A one-stop shop for veterans living in Scotland, whatever their needs may be. This service is based in Lothian, but has other branches throughout Scotland, including the Scottish Borders, Fife and Tayside. Please contact them to find out where your nearest branch is.

Tel: 0131 220 9920
Email: enquiries@veteransfirstpoint.org.uk
Website: www.veteransfirstpoint.org.uk

Please visit the drop-in service, Mon-Fri 1pm to 4:30pm at:
Veterans First Point Lothian Floor K, Argyle House, 3 Lady Lawson Street, Edinburgh, EH3 9DR.

Combat Stress
24-hour Veterans Mental Health helpline: 0800 138 1619
Textline: 07537 404 719
Email: combat.stress@rethink.org
Website: http://www.combatstress.org.uk/

Big White Wall
Offers online mental wellbeing support 24/7 where you can share your concerns with others who feel like you. This service is free to veterans.
Website: www.bigwhitewall.com

Veterans UK Helpline
07:30 – 18:30 Monday – Thursday
07.30 – 17:00 Friday
Tel: 0808 19 14 21 8
Email: veterans-uk@mod.uk

Who is organising and funding the study?
The research has been designed and is being carried out by a Trainee Clinical Psychologist undertaking a Doctorate in Clinical Psychology at the University of Edinburgh. The study is being supervised by Dr Nuno Ferreira (Lecturer in Clinical Psychology, University of Edinburgh), Mr Mike Henderson (Consultant Clinical Psychologist, NHS Borders) and Dr Lucy Abraham (Consultant Clinical Psychologist, Veterans First Point Scotland Lead, NHS Lothian). Funding and sponsorship has been provided by the University of Edinburgh and NHS Borders.

Who has reviewed the study?
All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee. A favourable ethical opinion has been obtained from the Research Ethics Committee. NHS management approval has also been obtained.

Who can I contact if I have a complaint?
You are free to discuss any concerns about the study with the researcher (see below for contact details).

Who can I contact about this study?
If you would like any further information about this study, please contact the researcher:

Margaret Bowes, Trainee Clinical Psychologist, NHS Borders
You are also free to discuss the study or any issues around participating in research with the study's supervisors. Their contact details are as follows:

Dr Nuno Ferreira, Clinical Psychologist, University of Edinburgh

Mr Mike Henderson, Consultant Clinical Psychologist, NHS Borders

Dr Lucy Abraham, Consultant Clinical Psychologist, Veterans First Point Scotland Lead, NHS Lothian

You can also discuss the study with your local Veterans First Point service.

Thank you for taking the time to read this information leaflet.

Appendix C.2: Patient Information Leaflet – Prison version

Participant Information Leaflet

Study: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life

Researcher: Margaret Bowes, Trainee Clinical Psychologist

We would like to invite you to take part in our research study. Before you decide to join the study we would like you to understand why the research is being done and what it would involve for you. Please take the time to read the following information carefully and discuss it with others if you wish. If you are interested in taking part and have any questions about the study that are not answered in this information leaflet, please contact the researcher before you make your decision.

What is the purpose of the study?
This study will explore how our thoughts and feelings about our life influence how veterans adjust from military to civilian life. Specifically, we are interested in whether veteran's experiences and beliefs about mental health and the way they manage their thoughts and feelings affect how they adjust to civilian life. By understanding the relationships between these factors, it is hoped that researchers will know more about how to help veterans who are finding it difficult to cope with civilian life.

Who should participate in the study?
We are interested in the views and experiences of veterans (both Regular or Reserve ex-service personnel) who served in the Armed Forces from 2001 onwards and who left the Armed Forces between 2001 and 2016.

What will taking part involve?
If you agree to join the study you will be asked to complete a short questionnaire pack which asks you about your adjustment to civilian life, quality of life, emotional well-being, your views and experiences of mental health and mental health treatment and about how you manage thoughts and feelings. This will take approximately 20 - 30 minutes.

Do I have to take part?
No – it is completely up to you whether or not you would like to take part. You are free to not take part or to stop taking part at any point in the study, without giving a reason.

If you agree to take part, you should complete the questionnaire pack and return this using the stamped-addressed envelope. However, you can change your mind at any time by not

returning the questionnaire, even if it is complete. After you have submitted your responses by returning the questionnaire, it will not be possible for you to withdraw from the study.

Completion and return of the survey implies that you have read the information in this form and consent to take part in the research.

What happens after I have taken part?
When you finish completing the questionnaire, you will be offered the choice to receive a summary of the study's findings that will be produced once the study is finished in April 2017.

Confidentiality
We will not ask you for any identifiable information. The data we collect from you during the study will be anonymised and your results from the study will therefore remain confidential.

What will happen to my data?
The data we collect from you during the study will be anonymised. All electronic data will be stored on an encrypted (i.e. scrambled) format on an NHS computer for the duration of the study, and afterwards at the University of Edinburgh. The questionnaires will be destroyed once the study is finished in April 2017. The results from this study are likely to be published in scientific journals and used in presentations with the wider research, NHS and veteran service communities. The data may also be shared anonymously with other researchers to support further veteran research in the future. However, as we do not ask for identifiable information, the data will be anonymised and you will not be able to be identified.

To ensure that the study is being run correctly, responsible representatives from the Sponsor and NHS Institution may access your anonymous data collected during the study. This is usual practice to make sure that research is being carried out responsibly. The Sponsor is responsible for overall management of the study and for providing insurance and indemnity.

Are there any benefits or risks from choosing to participate in this study?
Your participation in this study will help us to better understand the factors which affect ex-service personnel in adjusting from military to civilian life. This could help to improve a better transition for service personnel leaving the military. It could also help to improve how we provide mental health services for veterans in the future.

It is possible that you may find some of the questions in this study upsetting, for example, we ask about mental health problems. However, the risk of this is thought to be low. We do not anticipate any other risks to participants. Sometimes our thoughts and feelings can overwhelm us, so if you do feel concerned that you are experiencing any distress, please contact your GP. You may also wish to contact the confidential helplines listed below if you feel you need listening and emotional support:

The Samaritans
24 hour support
Tel: 116 123

25 Torphichen Street, **Edinburgh**, EH3 8HX

19 Orchard Street, **Falkirk**, FK1 1RF

45 Titchfield Street, **Kilmarnock**

65 Cathcart Street, **Greenock**, PA15 1DE

6 Old Glamis Road, **Dundee**, DD3 8HP

3 King's Place, **Perth**, PH2 8AA

67a Tomnahurich Street, **Inverness**, IV3 5DT

Breathing Space
Monday-Thursday 6pm to 2am
Friday 6pm-Monday 6am
Tel: 0800 83 85 87

Combat Stress
24-hour Veterans Mental Health helpline: **0800 138 1619**
Textline: 07537 404 719

Combat Stress, Hollybush House, Hollybush, Ayr, KA6 7EA

Veterans First Point Scotland
A one-stop shop for veterans living in Scotland, whatever their needs may be. This service is based in Lothian, but has other branches throughout Scotland, including the Scottish Borders, Fife and Tayside. Please contact them to find out where your nearest branch is.

Tel: 0131 220 9920

Veterans First Point Scotland, Floor K, Argyle House, 3 Lady Lawson Street, Edinburgh, EH3 9DR.

Veterans UK Helpline
07:30 – 18:30 Monday – Thursday
07.30 – 17:00 Friday
Tel: 0808 19 14 21 8

Veterans UK, Tomlinson House, Norcross, Thornton Cleveleys, FY5 3WP

Who is organising and funding the study?
The research has been designed and is being carried out by a Trainee Clinical Psychologist undertaking a Doctorate in Clinical Psychology at the University of Edinburgh. The study is being supervised by Dr Nuno Ferreira (Lecturer in Clinical Psychology, University of Edinburgh), Mr Mike Henderson (Consultant Clinical Psychologist, NHS Borders), Dr Lucy Abraham (Consultant Clinical Psychologist, Veterans First Point Scotland Lead, NHS Lothian) and Dr Alex Quinn (Consultant Forensic Psychiatrist, Veterans First Point Lothian). Funding and sponsorship has been provided by the University of Edinburgh and NHS Borders.

Who has reviewed the study?
All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee. A favourable ethical opinion has been obtained from the Research Ethics Committee and also the Scottish Prison Service Research Access and Ethics Committee. NHS management approval has also been obtained.

Who can I contact if I have a complaint?
You are free to discuss any concerns about the study with the researcher (see below for contact details).

Who can I contact about this study?
If you would like any further information about this study, please contact the researcher:

Margaret Bowes, Trainee Clinical Psychologist, NHS Borders
Psychological Services, Huntlyburn Cottages, Melrose, TD6 9BD.

You are also free to discuss the study or any issues around participating in research with the study's supervisors. Their contact details are as follows:

Dr Nuno Ferreira, Clinical Psychologist, University of Edinburgh

Mr Mike Henderson, Consultant Clinical Psychologist, NHS Borders

Dr Lucy Abraham, Consultant Clinical Psychologist, Veterans First Point Scotland Lead, NHS Lothian

Dr Alex Quinn, Consultant Psychiatrist, Veterans First Point, NHS Lothian

Thank you for taking the time to read this information leaflet.

Appendix D: Questionnaire set

Participant Identification Number: _____

Please answer all of these questions. Some of the questions may seem very similar to other questions you have been asked about before, but it is important for the research to collect some of this information again.
If you are unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response.

I confirm that I have read the Participant Information Leaflet and understand that some of the questions are of a sensitive nature, with the potential to cause distress.

Please tick ✓ the box to confirm this: ☐

1.

Please circle the answer which most applies to you.

1. What is your gender?	1) Male	2) Female
2. What is your age?	1) 16-24 2) 25-34 3) 35-44 4) 45-54 5) 55-64 6) 65+	
3. What is your marital status?	1) Single, never married 2) Married/civil partnership 3) Co-Habiting 4) Separated or divorced 5) Widowed	

4. Do you have any dependents?

(This might include children or someone you are a carer for)

1) Yes
2) No

5. Which best describes your living arrangements?

1) Live alone
2) Live with partner/spouse
3) Live with children
4) Live with partner/spouse and children
5) Live with relatives
6) Live with friends
7) Homeless
8) House of multiple occupancy
9) Prison

6. Which best describes your living situation?

1) Private let
2) Supported accommodation
3) Homeless accommodation
4) Privately owned
5) Council house/housing association
6) Mobile home
7) With relatives
8) Military housing
9) HMP

7. Is your living situation stable?

1) Yes
2) No

8. What is the highest level of education you have completed?

1) Less than high school
2) High school level
   e.g. Standard Grades/GCSEs/O'Levels
3) Highers/A'Levels

4) Trade/technical/vocational training
e.g. NVQ, HNC, HND, Command, Leadership and Management (CLM) programme

5) Graduate degree
e.g BSc, BA

6) Post-graduate degree
e.g. MSc, MA, doctorate

9. Which best describes your employment status?

1) Employed full-time
2) Employed part-time
3) Unemployed
4) Retired
5) Signed off sick – employed
6) Signed off sick - unemployed
7) Student
8) Voluntary

10. Which best describes your current benefits situation?

1) Income Support
2) Employment Support Allowance
3) Disability Living Allowance
4) Winter Fuel Allowance
5) Community Care Grant
6) Social Care Grant/Loan
7) Working Family Tax Credit
8) Child Tax Credit
9) Pension Credits
10) Housing / council tax benefits
11) Job Seekers Allowance
12) Incapacity
13) None
14) Suspended (prison or hospital)

11. Which best describes your service pension?	1) Not applied for 2) Not entitled as yet 3) War 4) Armed Forces Pension Scheme 5) Medical 6) Service 7) Application in progress	
12. Did you serve in the Regulars or the Reserves?	1) The Regulars	2) The Reserves
13. Which branch of the military did you serve in?	1) British Army 2) Royal Navy 3) Royal Air Force 4) Royal Marines 5) Merchant Navy	
14. Which of the following best describes your rank when you left the Armed Forces?	1) Private 2) Junior non-commissioned officer (JNCO) 3) Senior non-commissioned officer (SNCO)/Warrant Officer (WO) 4) Second lieutenant/Captain 5) Major or above	
15. Which of the following best describes your role during deployment?	1) Combat	2) Support
16. Did you serve in conflicts between 2001 and 2016?	1) Yes	2) No
17. Which tours did you serve in?	…… …… …… ……	

18. For how long did you serve in the Armed Forces?

1) 0-4 years
2) 5-10 years
3) 11-15 years
4) 16-20 years
5) 21-25 years
6) 26-30 years
7) 30-40 years
8) >40 years

19. When did you leave the military?

1) Before 2001
2) 2001
3) 2002
4) 2003
5) 2004
6) 2005
7) 2006
8) 2007
9) 2008
10) 2009
11) 2010
12) 2011
13) 2012
14) 2013
15) 2014
16) 2015
17) 2016

20. For what reason did you leave the Armed forces?

1) Normal Service Leaver: Completion of engagement
2) Normal Service Leaver: You were given notice to leave
3) Normal Service Leaver: You were made redundant
4) Early Service Leaver: You completed less than 4 years of service and were asked to leave
5) Early Service Leaver: You completed less than 4 years of service and requested to leave
6) Medical discharge: Physical health reasons
7) Medical discharge: Mental health reasons
8) Medical discharge: Both physical and mental health reasons
9) Dismissal
10) Other ***(please specify)***: ……..

2.

Please circle the answer which most applies to you.

21. Are you <u>currently</u> suffering from mental health issues?

1) Yes 2) No

22. Are you <u>currently</u> taking prescribed medication for mental health issues?

1) Yes 2) No

23. Are you <u>currently</u> receiving help from a mental health professional?

1) Yes 2) No

24. Are you <u>currently</u> receiving help for mental health issues from any of the following health professionals?

*(Please tick all that apply)***:**

1) GP
2) Psychiatrist
3) Community Psychiatric Nurse (CPN)
4) Clinical Psychologist
5) CBT Therapist/Psychological Therapist
6) Counsellor
7) A Specialist Veteran Service Professional (*please state which professional*): ……..
8) Voluntary Sector/Charity Organisation *e.g. addiction service* (*please state which organisation*): ……
9) Other (*please specify*): ……..
10) Does not apply to me (I am not currently receiving help for mental health issues)

25. Have you suffered from mental health issues <u>in the past</u>?

1) Yes 2) No

26. Have you taken prescribed medication for mental health issues <u>in the past?</u>

1) Yes
2) No

27. <u>In the past</u> when I struggled with mental health issues I sought help:

1) Never
2) Sometimes
3) Always
4) Does not apply to me (I did not suffer from mental health problems in the past)

28. <u>In the past</u> when I struggled with mental health issues, I sought help from the following health professionals
(P*lease tick all that apply*)**:**

1) GP
2) Psychiatrist
3) Community Psychiatric Nurse (CPN)
4) Clinical Psychologist
5) CBT Therapist/Psychological Therapist
6) Counsellor
7) A Specialist Veteran Service Professional (*please state which professional*): ……
8) Voluntary Sector/Charity Organisation *e.g. addiction service* (*please state which organisation*): ……
9) Other (*please specify*): ……..
10) Does not apply to me (I did not suffer from mental health problems)

Thank you!

Thank you for taking the time to take part in my study.

If you would like a summary of the results of this study to be sent to you after the research is completed in April 2017, please leave your email address.

If you would prefer not to be emailed, please leave the following blank.

I would like to be emailed a summary of the results of this research and my email address is: …….

Please post your completed questionnaire in the pre-paid envelope provided. Thank you.

Appendix E.1: NHS REC Approval

WoSRES
West of Scotland Research Ethics Service

NHS
Greater Glasgow and Clyde

West of Scotland REC 4
West Ambulatory Care Hospital
Dalnair Street
Yorkhill
Glasgow
www.nhsggc.org.uk

Date 14 January 2016
Direct line 0141-232-1806
e-mail Wosrec4@ggc.scot.nhs.uk

Dear Miss Bowes

Study title:	**The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life**
REC reference:	**16/WS/0008**
IRAS project ID:	**188582**

The Research Ethics Committee reviewed the above application at the meeting held on 08 January 2016. Thank you for attending to discuss the application.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact the REC Manager Mrs Evelyn Jackson, wosrec4@ggc.scot.nhs.uk. Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

Ethical opinion

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below. .

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

1. The Committee suggested that appropriate support organisations be informed about the study, in case of increased calls to them.

2. In the study poster, move the bullet point relating to those who had adjusted well to civilian life to the end of first three bullet points, to remove any potential for recruitment bias given that the poster seems to highlight those who have had a problem adjusting to civilian life.

3. The following statement should be made at the start of the questionnaires (both hard copy and electronic format) which should include a tick box:

   "I confirm that I have read the Participant Information Sheet and understand that some of the questions are of a sensitive nature, with the potential to cause distress."

4. The list of support organisations should be given in larger font.

5. It is stated in the submission and in the Participant Information Sheet that should someone decide to leave the study, it would not affect their routine care. Participants are also directed to the NHS complaints procedure if they have any complaints about the study. This is not appropriate as the participants are not being recruited as NHS patients.

You should notify the REC once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. Revised documents should be submitted to the REC electronically from IRAS. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which you can make available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for HRA Approval (England)/ NHS permission for research is available in the Integrated Research Application System, at www.hra.nhs.uk or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Summary of discussion at the meeting

Ethical issues raised by the Committee in private discussion, together with responses given by the researcher when invited into the meeting

- **Recruitment arrangements and access to health information, and fair participant selection**

The Committee asked for more information regarding who would be recruited to the study.

Miss Bowes explained that she hoped to recruit veterans who had left the service between 2001-2016, i.e. the younger generation, and that would include reservists who had been on active duty. She further explained that most veterans adjust well to civilian lives but around 8% do not adjust well.

The Committee asked for clarification regarding whether veterans who had adjusted well to civilian life were to be included in the study.

Miss Bowes stated that they were to be included.

The Committee noted that the poster/leaflet did not reflect this as the text relating to those who had adjusted well was disjointed from the top three bullet points.

- **Favourable risk benefit ratio; anticipated benefit/risks for research participants (present and future)**

The risk of participants becoming distressed is dealt with and participants would be given details of support organisations, such as The Samaritans. The Committee suggested that appropriate organisations be informed of the study, in case of increased contact to them.

- **Care and protection of research participants; respect for potential and enrolled participants' welfare and dignity**

It is stated in the application and the PIS that if a participant withdraws from the study, it would not affect their routine care, but this is not accurate.

Also participants are informed to make any complaints about the study to the NHS complaints system. Again this is not appropriate, as participants are not being recruited through them being NHS patients.

Given the potential for emotional distress, the Committee suggested that assurance should be sought that the PIS had been read and a reminder of the potential for distress, be printed at the start of the questionnaires.

Ms Bowes clarified that veterans who were not adjusting well to civilian life would be experiencing ongoing problems and that she felt that the questions would not provoke additional distress.

- **Informed consent process and the adequacy and completeness of participant information**

The PIS requires some adjustments and consent is implied by the completion of the questionnaires.

Approved documents

The documents reviewed and approved at the meeting were:

Document	*Version*	*Date*
Copies of advertisement materials for research participants [Study poster 1]	1	16 December 2015
Copies of advertisement materials for research participants [Study poster 2]	1	16 December 2015
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [certificate of employer's liability insurance]	1	
Letter from sponsor [Letter from sponsor]		17 December 2015
Letters of invitation to participant [Email invitation to participate in study]	1	15 December 2015
Letters of invitation to participant [Social media invitation]	1	14 December 2015
Non-validated questionnaire [Demographics]	1	
Non-validated questionnaire [use of mental health services]	1	
Non-validated questionnaire [attitude and intention to seek treatment]	1	
Other [Policy confirmation]	1	13 July 2015
Other [Clinical Trial Liability Insurance]	1	28 July 2015
Other [Professional Indemnity Insurance]	1	28 July 2015
Participant information sheet (PIS) [Participant Information Leaflet - template]	1	15 December 2015
REC Application Form [REC_Form_16122015]		16 December 2015
Research protocol or project proposal [Study Protocol]	1	29 November 2015
Summary CV for Chief Investigator (CI) [Chief Investigator CV]	1	
Summary CV for supervisor (student research) [Academic Supervisor CV]		
Validated questionnaire [ERQ]		
Validated questionnaire [AAQ]		
Validated questionnaire [SSRPH]		
Validated questionnaire [CORE 10]		
Validated questionnaire [M2C-Q]		
Validated questionnaire [EUROHIS-QOL]		
Validated questionnaire [ISMI]		

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

16/WS/0008	**Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project.

Yours sincerely

Evelyn Jackson

***For* Dr Brian Neilly**
Chair

Enclosures: *List of names and professions of members who were present at the meeting*
"After ethical review – guidance for researchers"

Appendix E.2: NHS REC Amendment

WoSRES
West of Scotland Research Ethics Service

NHS
Greater Glasgow and Clyde

West of Scotland REC 4
West Ambulatory Care Hospital
Dalnair Street
Yorkhill
Glasgow
www.nhsggc.org.uk

Date 23 May 2016
Direct line 0141-232-1807
e-mail Wosrec4@ggc.scot.nhs.uk

Dear Miss Bowes

Study title:	**The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life**
REC reference:	**16/WS/0008**
Amendment number:	**Substantial amendment 1 - 1/4/2016 (REC Ref AM02)**
Amendment date:	**27 April 2016**
IRAS project ID:	**188582**

Summary of Amendment;

This Substantial Amendment refers to the addition of a new recruitment site. This site is prisons managed by the Scottish Prison Service, specific sites are outlined within. There is also the addition of several recruitment areas within the NHS.

The Demographic Information Questionnaire and Protocol have been updated in accordance with the new recruitment site.

There also is addition of a new Participant Information Leaflet for the veterans in custody. The above amendment was reviewed by the Sub-Committee in correspondence.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

On 13 May 2016 the Sub-Committee requested clarification from the researcher on several points via email as follows;

- Can you confirm that all new sites added are Scottish Prison Services and no new recruitment will be in England or Wales?
- It was noted that there was a list of Help Contacts given, the Sub-Committee would like some clarification on how readily available these are for someone in prison.
- It was also noted that the original sample size was 163, with the addition of 15 HM prisons and 4 NHS regions will this increase the recruitment number? If yes do you see anticipate that the increase in numbers will be manageable?

On 13 May 2016 the researcher responded via email. The Sub-Committee were satisfied with the response so were therefore happy to approve the amendment.

Approved documents

The documents reviewed and approved at the meeting were:

Document	*Version*	*Date*
Covering letter on headed paper		27 April 2016
Non-validated questionnaire [Demographic Information Questionnaire]	3	01 April 2016
Notice of Substantial Amendment (non-CTIMP)	Substantial amendment 1 - 1/4/2016 (REC Ref AM02)	27 April 2016
Other [Response to Questions]		13 May 2016
Participant information sheet (PIS) [Scottish Prison Service Version]	1	01 April 2016
Research protocol or project proposal	2	01 April 2016

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

R&D approval

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at http://www.hra.nhs.uk/hra-training/

16/WS/0008:	**Please quote this number on all correspondence**

Yours sincerely

On Behalf of
Dr Brian Neilly
Chair

Enclosures: *List of names and professions of members who took part in the review*

Copy to: *Ms Joy Borowska, NHS Borders Research and Development*
Mrs Jo-Anne Robertson

Appendix E.3: University of Edinburgh REC Approval

SCHOOL of HEALTH IN SOCIAL SCIENCE
CLINICAL AND HEALTH PSYCHOLOGY

The University of Edinburgh
Medical School
Doorway 6, Teviot Place
Edinburgh EH8 9AG

Telephone 0131 651 3969
Fax 0131 650 3891
Email submitting.ethics@ed.ac.uk

Margaret Bowes
Trainee Clinical Psychologist
Department of Clinical and Health Psychology
School of Health in Social Science
University of Edinburgh
Medical School, Teviot Place
Edinburgh
EH8 9AG

17 February 2016

Dear Margaret,

Application for Level 1 Ethical Approval

IRAS Reference: 16/WS/0008
Project Title: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life
Academic Supervisor: Nuno Ferreira

Thank you for submitting documentation confirming that the above project has received IRAS approval. I can confirm that the IRAS approval is sufficient to also confer University ethical approval.

I would be grateful if you could please keep us updated with any amendments to your protocol, should they be required.

Yours sincerely,

Kirsty Gardner

Administrator
Clinical Psychology

Appendix E.4: SPS RAEC Approval

HEADQUARTERS

Research
Strategy and Innovation

Calton House
5 Redheughs Rigg
EDINBURGH
EH12 9HW

Direct dialing: 0131 244 8771
Switchboard: 0131 244 8745
Fax: 0131 244 3651

7 June 2016

Dear Margaret

THE INFLUENCE OF PSYCHOSOCIAL FACTORS IN VETERAN ADJUSTMENT TO CIVILIAN LIFE

Your research proposal on veterans' adjustment to civilian life was considered by the Research Access and Ethics Committee at its April meeting and access was approved.

I am currently getting in touch with VICSOs' convener to discuss how best to organise the distribution of the questionnaires in each establishment. Once I have an up-to-date list of establishment VICSOs I will contact you again to arrange for questionnaires to be sent out.

I note you have already signed and returned SPS standard access regulations.

RAEC looks forward to receiving a copy of your finished thesis in due course.

Yours sincerely

James K Carnie

Dr James Carnie
SPS Research

Appendix F.1: NHS Ayrshire & Arran R and D Approval

Research & Development
58 Lister Street
University Hospital Crosshouse
Kilmarnock
KA2 0BB

Date 14 June 2016
Your Ref
Our Ref AG/KLB/NM R&D 2016AA034

Enquiries to Karen Bell
Extension 25850
Direct line 01563 825850
Fax 01563 825806
Email Karen.bell@aaaht.scot.nhs.uk

Dear Miss Bowes

The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life

I confirm that NHS Ayrshire and Arran have reviewed the undernoted documents and grant R&D Management approval for the above study.

Documents received:

Document	Version	Date
SSI form	Version 5.3.1	07/06/16
Protocol	Version 2.0	01/04/16
R&D Form	Version 5.2.0	18/12/15
Participant Information Leaflet - generic template	Version 2.0	20/01/16
Participant Information leaflet – Scottish Prison Service	Version 1.0	01/04/16
Email invitation to participate in study	Version 1.0	15/12/15
Demographic Information Questionnaire	Version 3.0	01/04/16
Attitude and Intention to Seek Treatment questionnaire	Version 1.0	15/12/15
Social media invitation to take part in study	Version 1.0	14/12/15
Study Poster 1	Version 2.0	20/01/16
Study Poster 2	Version 2.0	20/01/16
Use of Mental Health Services Questionnaire	Version 1.0	15/12/15
Acceptance and Action Questionnaire II (AAQ-II)	No version	05/02/16

The terms of approval state that the investigator authorised to undertake this study is: -

- Miss Margaret Bowes, Trainee Clinical Psychologist, NHS Borders

With additional investigator: -

- Dr Lucy Abraham, Consultant Clinical Psychologist, Veterans First Point, NHS Scotland

The sponsors for this study are University of Edinburgh.

This approval letter is valid until 14 September 2017.

Regular reports of the study require to be submitted. Your first report should be submitted to Dr K Bell, Research & Development Manager in 12 months time and subsequently at yearly intervals until the work is completed.

Please note that as a requirement of this type of study your name, designation, work address, work telephone number, work e-mail address, work related qualifications and whole time equivalent will be held on the Scottish National Research Database so that NHS R&D staff in Scotland can access this information for purposes related to project management and report monitoring.

In addition approval is granted subject to the following conditions: -

- All research activity must comply with the standards detailed in the Research Governance Framework for Health and Community Care www.cso.scot.nhs.uk/publications/ResGov/Framework/RGFEdTwo.pdf and appropriate statutory legislation. It is your responsibility to ensure that you are familiar with these, however please do not hesitate to seek further advice if you are unsure.

- You are required to comply with Good Clinical Practice (ICH-GCP guidelines may be found at www.ich.org/LOB/media/MEDIA482.pdf), Ethics Guidelines, Health & Safety Act 1999 and Data Protection Act 1998.

- If any amendments are to be made to the study protocol and or the Research Team the Researcher must seek Ethical and Management Approval for the changes before they can be implemented.

- The Researcher and NHS Ayrshire and Arran must permit and assist with any monitoring, auditing or inspection of the project by the relevant authorities.

- The NHS Ayrshire and Arran Complaints Department should be informed if any complaints arise regarding the project and the R&D Department must be copied into this correspondence.

- The outcome and lessons learnt from complaints must be communicated to funders, sponsors and other partners associated with the project.

- As custodian of the information collated during this research project you are responsible at all times for ensuring the security of all personal information collated in line with NHS Scotland policies on information assurance and security, until the secure destruction of these data. The retention time periods for such data should comply with the requirements of the Scottish Government Records Management: NHS Code Of Practice. Under no circumstances should personal data be stored on any unencrypted removable media e.g. laptop, USB or mobile device (for further information and guidance please contact the Information Governance Team based at University Hospital Crosshouse 01563 825831 or 826813).

If I can be of any further assistance please do not hesitate to contact me. On behalf of the department, I wish you every success with the project.

Yours sincerely

Dr Alison Graham
Medical Director

c.c. John Taylor, Associate Medical Director, Mental Health Services, NHS Ayrshire & Arran
Dr Nuno Ferreira, Academic Supervisor, University of Edinburgh
Ruth McMurdo, Clinical Operations Manager, HMP Kilmarnock
Jo-Anne Robertson, University of Edinburgh (sponsor contact)
Lesley Douglas, Finance, Ailsa Hospital
Information Governance, Ailsa Hospital

Appendix F.2: NHS Borders R and D Approval

NHS Borders

Research Administration
Clinical Governance & Quality

Clinical Governance & Quality
Borders General Hospital
Melrose
Roxburghshire TD6 9BS

Telephone 01896 826719
Fax 01896 826040
www.nhsborders.org.uk

Date 10 February 2016

Our Ref 15/BORD/37
Enquiries to Joy Borowska
Extension 01896 826717
Email research.governance@borders.scot.nhs.uk

Dear Miss Bowes

NRS16/188582: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life

Thank you for sending details of your study to NHS Borders. I can confirm that the Research Governance Committee has reviewed the documentation, and on this basis I am pleased to inform you that this study has management approval for commencement within NHS Borders.

It is a condition of approval that everyone involved in this study abides by the guidelines/protocols implemented by NHS Borders with respect to confidentiality and Research Governance. It is your responsibility to ensure that you are familiar with these, however please do not hesitate to seek advice if you are unsure. As custodian of the information collated during this research project, you are responsible for ensuring the security of all personal information collected, in line with NHS Scotland IT Security policies until the destruction of data.

Please advise the R&D Office immediately of any changes to the project such as amendments to the protocol, recruitment, funding, personnel or resource input required of NHS Borders. Please also advise the R&D office when recruitment has ended and when the study has been fully completed.

May I take this opportunity to wish you every success with your project. Please do not hesitate to contact the R&D Office should you require any further assistance.

Yours sincerely

Laura Jones

Mrs Laura Jones
Head of Quality and Clinical Governance

NHS Borders

Research Administration
Clinical Governance & Quality

Clinical Office
Borders General Hospital
Melrose
Roxburghshire TD6 9BS

Telephone 01896 826719
Fax 01896 826040
www.nhsborders.org.uk

Miss Margaret Bowes
NHS Borders
Psychological Services
Mental Health Administration
Huntlyburn House
Melrose
TD6 9BD

Date 9 June 2016

Our Ref 15/BORD/37
Enquiries to Joy Borowska
Extension 01896 826717
Email research.governance@borders.scot.nhs.uk

Dear Miss Bowes

Veteran Adjustment to Civilian Life version 1-SA27.04.16 CAT A

Thank you for sending details of the amendment of your study to NHS Borders. I am pleased to inform you the amendment has been granted management approval the Research Governance Committee for commencement within NHS Borders.

Please advise the R&D Office immediately of any changes to the project such as amendments to the protocol, recruitment, funding, personnel or resource input required of NHS Borders.

Please inform this office when recruitment has closed and when the study has been completed. Please quote the reference number stated above in all correspondence.

May I take this opportunity to wish you every success with your project. Please do not hesitate to contact the R&D Office should you require any further assistance.

Yours sincerely

Laura Jones

Mrs Laura Jones
Head of Quality and Clinical Governance

Appendix F.3: NHS Dumfries and Galloway R and D Approval

Research and Development Support Unit
Ground Floor
Dumfries and Galloway Royal Infirmary
Bankend Road
Dumfries
DG1 4AP

NHS
Dumfries
& Galloway

Miss Margaret Bowes
NHS Borders
Psychological Services
Mental Health Administration
Huntlyburn House
Melrose
TD6 9BD

Date: 2nd June 2016
Our ref: 16/DGY/025
Study title: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life.
Protocol version approved: Version 1 Dated 29/11/2015
Amendments included: N/A

Dear Miss Bowes

Thank you for sending me details of your study with a request for management approval. I can confirm that the study review team has reviewed the documentation and on this basis I am pleased to inform you that your study has management approval for commencement within NHS Dumfries and Galloway.

It is a condition of this approval that everyone involved in this study abides by the guidelines/protocols laid down by this Health Board in respect of confidentiality and Research Governance. It is your responsibility to ensure you are familiar with these; please do not hesitate to seek advice if you are unsure. (Copies of Research Governance Framework documents are available via the website www.sehd.scot.nhs.uk/cso and then use the publications link.

We also note that it is the sponsor's responsibility to ensure that appropriate training is in place for all local investigators. It is important that all research must be carried out in compliance with the Research Governance Framework for Health and Community Care and the new EU Clinical Trials Directive (for clinical trials involving investigational medicinal products).

As part of the Health Board's responsibilities under Research Governance a sample of studies will be monitored, and it is therefore important that all records in connection with the study are kept up to date and available for review. We are also required to inform you that details of your study will be entered onto our R&D database. As custodian of the information collated during this research project, you are responsible for ensuring the security of all personal information collected, in line with NHS Scotland IT Security Policies, until the destruction of this data.

Research and Development Support Unit
Ground Floor
Dumfries and Galloway Royal Infirmary
Bankend Road
Dumfries
DG1 4AP

NHS
Dumfries
& Galloway

If your study is adopted by UKCRN into a portfolio then please advise this department of recruitment figures by adding accrual data to that database on a monthly basis.

Please notify the R&D office immediately you become aware of any serious adverse events associated with this research.

You must contact the R&D Department if/when the project is subject to any minor or substantial amendments so that these can be appropriately assessed, and approved, where necessary. I understand that performance of this study will not infringe on NHS Dumfries and Galloway's ability to deliver our usual level of service.

May I take this opportunity to wish you every success with your project. Please do not hesitate to seek help and advice from the R&D Support Unit (ext 33165/33815) if there is anything you feel you require assistance with. I look forward to hearing about your work and would appreciate a short annual report and a final report when the study is complete.

Yours Sincerely

Louise Muirhead.

pp Dr GJ Baxter
Research Lead

cc: SREDA Database

Appendix F.4: NHS Fife R and D Approval

Medical Director

Hayfield House
Hayfield Road
KIRKCALDY
KY2 5AH

NHS Fife

Date 2 February 2016
Our Ref 16-001 188582
16/WS/0008
Enquiries to Aileen Yell
E-mail aileenyell@nhs.net
Telephone 01383 623623 Ext 20940
Website www.nhsfife.org

Dear Miss Bowes

Project Title: The influence of psychosocial factors in veteran adjustment to civilian life

Thank you for your application to carry out the above project. Your project documentation (detailed below) has been reviewed for resource and financial implications for NHS Fife and I am happy to inform you that NHS permission for the above research has been granted on the basis described in the application form, protocol and supporting documentation. The documents reviewed were:

Document	Version	Date
Protocol	1	29 November 2015
IRAS R&D Form	5.2.0	18 December 2015
REC provisional favourable opinion letter		14 January 2016
REC final favourable opinion letter		21 January 2016
Copies of documents referred to within REC letters		
IRAS SSI Form	5.2.0	25 January 2016
UK Study-Wide Governance Report		25 January 2016

The terms of the approval state that Dr Lucy Abraham of Veterans First Point Scotland, NHS Scotland will be the local collaborator for this study and will assist with study facilitation.

I note that the favourable ethical opinion applies to all NHS sites taking part in the study therefore no separate Site Specific Review is required in this case.

The sponsors for this study are University of Edinburgh.

Details of our participation in studies will be included in annual returns we are expected to complete as part of our agreement with the Chief Scientist Office. Regular reports of the study require to be submitted. Your first report should be submitted to Dr A Wood, R&D Manager, R&D Department, Queen Margaret Hospital, Whitefield Rd, Dunfermline, KY12 OSU (Amanda.wood3@nhs.net) in 12 months time and subsequently at yearly intervals until the work is completed. A Lay Summary will also be required upon completion of the project.

In addition, approval is granted subject to the following conditions:-

[1] NHS Fife was awarded the Carbon Trust Standard in February 2010 and is the first Scottish NHS Board to achieve this accolade.

NHS
Fife

All research activity must comply with the standards detailed in the Research Governance Framework for Health & Community Care (http://www.cso.scot.nhs.uk/publications/resgov/resgov.htm), health & safety regulations, data protection principles, other appropriate statutory legislation and in accordance with Good Clinical Practice (GCP).

Any amendments which may subsequently be made to the study should also be notified to Aileen Yell, Research Governance Officer (aileenyell@nhs.net) , as well as the appropriate regulatory authorities. Notification should also be given of any new research team members post approval and/or any changes to the status of the project.

This organisation is required to monitor research to ensure compliance with the Research Governance Framework and other legal and regulatory requirements. This is achieved by random audit of research. You will be required to assist with and provide information in regard to monitoring and study outcomes (including providing recruitment figures to the R&D office as and when required).

As custodian of the information collated during this research project you are responsible for ensuring the security of all personal information collected in line with NHS Scotland IT Security Policies, until the destruction of this data.

Permission is only granted for the activities for which a favourable opinion has been given by the REC (and which have been authorised by the MHRA where appropriate).

The research sponsor or the Chief Investigator or local Principal Investigator at a research site may take appropriate urgent safety measures in order to protect research participants against any immediate hazard to their health or safety. The R&D office (aileenyell@nhs.net) should be notified that such measures have been taken. The notification should also include the reasons why the measures were taken and the plan for further action. The R&D office should be notified within the same time frame of notifying the REC and any other regulatory bodies.

I would like to wish you every success with your study and look forward to receiving a summary of the findings for dissemination once the project is complete.

Yours sincerely

DR FRANCES ELLIOT
Medical Director
NHS Fife

Cc : Aileen Yell, Research Governance Officer, NHS Fife, Queen Margaret Hospital, Dunfermline

Medical Director

Hayfield House
Hayfield Road
KIRKCALDY
KY2 5AH

NHS Fife

Date 20 June 2016
Our Ref 16-001 188582
16/WS/0008
Enquiries to Aileen Yell
E-mail aileenyell@nhs.net
Telephone 01383 623623 Ext 20940
Website www.nhsfife.org

Dear Miss Bowes

The influence of psychosocial factors in veteran adjustment to civilian life

Substantial Amendment No 1 dated 27 April 2016 (REC Ref AM02)

Thank you for submitting a copy of the following documents in relation to the above study currently being conducted within NHS Fife :-

Approved documents

Document	Version	Date
Protocol	2	1 April 2016
Demographic information questionnaire	3	1 April 2016
Participant Information Sheet (Scottish Prison Service version)	1	1 April 2016
Notice of Substantial Amendment		27 April 2016
REC favourable opinion for amendment		23 May 2016

Following review, NHS Fife has decided that they can accommodate this amendment. The amendment may therefore be immediately implemented at this site under the existing NHS permission. Please note that you may only implement changes that were described in the amendment documentation detailed above.

Yours sincerely

DR FRANCES ELLIOT
Medical Director
NHS Fife

Cc : Aileen Yell, Research Governance Officer, NHS Fife, Queen Margaret Hospital, Dunfermline

Appendix F.5: NHS Forth Valley R and D Approval

NHS
Forth Valley

Date: 16 June 2016
Your Ref:
Our Ref:
Direct Line: 01324 677564
Email: FV-UHB.RandD-depart@nhs.net
R&D ref: FV938

Dear Miss Bowes

Study title: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life
NRES number:

Following the favourable opinion from the West of Scotland Research Ethics Committee 4 on 14 January 2016, I am pleased to confirm that I formally gave Management Approval to the study above on 16 June 2016.

This approval is granted subject to your compliance with the following:

1. Any amendments to the protocol or research team must have Ethics Committee and R&D approval (as well as approval from any other relevant regulatory organisation) before they can be implemented. Please ensure that the R&D Office and (where appropriate) NRS are informed of any amendments as soon as you become aware of them.

2. You and any local Principal Investigator are responsible for ensuring that all members of the research team have the appropriate experience and training, including GCP training if required.

3. All those involved in the project will be required to work within accepted guidelines of health and safety and data protection principles, any other relevant statutory legislation, the Research Governance Framework for Health and Community Care and IHC-GCP guidelines. A copy of the Framework can be accessed via the Chief Scientist Office website at: http://www.cso.scot.nhs.uk/Publications/ResGov/Framework/RGFEdTwo.pdf
and ICH-GCP guidelines may be found at http://www.ich.org/LOB/media/MEDIA482.pdf

4. As custodian of the information collected during this project you are responsible for ensuring the security of all personal information collected in line with NHS Scotland IT security policies, until the destruction of this data.

5. You or the local Principal Investigator will be required to provide the following reports and information during the course of your study:

- A progress report **annually**

V:\Research And Development\ALL PROJECT FOLDERS\Proposed-FV number\FV938 - Veteran Adjustment to Civilian Life\CofC& Local MA\FV938 approval.docx

- Recruitment numbers on a **monthly** basis (if your study should be added to the NIHR research Portfolio you will receive a separate letter from the R&D Office detailing the steps to be taken)
- Report on SAEs and SUSARs if your study is a Clinical Trial of an Investigational Medicinal Product
- Any information required for the purpose of internal or external audit and monitoring
- Copies of any external monitoring reports
- Notification of the end of recruitment and the end of the study
- A copy of the final report, when available.
- Copies of or full citations for any publications or abstracts

The appropriate forms will be provided to you by the Research and Development office when they are needed. Other information may be required from time to time.

Yours sincerely

pp
MISS TRACEY GILLIES
Medical Director

CC:

Appendix F.6: NHS Grampian R and D Approval

Research and Development
Foresterhill House Annexe
Foresterhill
ABERDEEN
AB25 2ZB

Miss Margaret Bowes
NHS Borders
Psychological Services
Mental Health Administration
Huntlyburn House
Melrose
TD6 9BD

Date 05/02/2016
Project No 2016PC001

Enquiries to Lynn Massie
Extension 53846
Direct Line 01224 553846
Email grampian.randdpermissions@nhs.net

Dear Miss Bowes

Management Permission for Non-Commercial Research

STUDY TITLE: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life.

PROTOCOL NO: Version 1 dated 29/11/15
REC REF: 16/WS/0008
NRS REF: NRS16/188582

Thank you very much for sending all relevant documentation. I am pleased to confirm that the project is now registered with the NHS Grampian Research & Development Office. The project now has R & D Management Permission to proceed locally. This is based on the documents received from yourself and the relevant Approvals being in place.

All research with an NHS element is subject to the Research Governance Framework for Health and Community Care (2006, 2nd edition), and as Chief or Principal Investigator you should be fully committed to your responsibilities associated with this.

R&D Permission is granted on condition that:

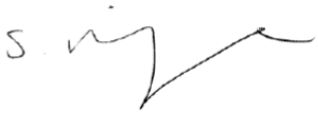
1) **The R&D Office will be notified and any relevant documents forwarded to us if any of the following occur:**
   - **Any Serious Breaches in Grampian (Please forward to pharmaco@abdn.ac.uk).**
   - **A change of Principal Investigator in Grampian or Chief Investigator.**
   - **Any change to funding or any additional funding**

2) **The R&D Office will be notified when the study ends.**

3) **The Sponsor will notify all amendments to the relevant National Co-ordinating centre. For single centre studies, amendments should be notified to the R&D office directly.**

We hope the project goes well, and if you need any help or advice relating to your R&D Management Permission, please do not hesitate to contact the office.

Yours sincerely



Susan Ridge
Non-Commercial Manager

cc: Research Monitor

Sponsor: University of Edinburgh

Research and Development

Foresterhill House Annexe
Foresterhill
ABERDEEN
AB25 2ZB

NHS Grampian

Miss Margaret Bowes
NHS Borders
Psychological Services
Mental Health Administration
Huntlyburn House
Melrose
TD6 9BD

Date 30/06/2016
Our Ref 2016PC001

Enquiries to Lynn Massie
Extension 53846
Direct Line 01224 553846
Email grampian.randdpermissions@nhs.net

Dear Miss Bowes

STUDY TITLE: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life.

PROTOCOL NO: Version 2; 01.04.16
REC REF: 16/WS/0008
NRS REF: NRS16/188582
AMENDMENT NO: SA01 dated 27.4.16

We are in receipt of a copy of the amendment to the above project relating to changes to the following documents:

• Demographic Information Questionnaire	V3	01.04.16
• Participant Information Sheet (Scottish Prison Service Version)	V1	01.04.16
• Protocol	V2	01.04.16

This letter is confirmation that this amendment does not alter local NHS Grampian R&D management permission of the project.

Yours sincerely

Susan Ridge
Non Commercial Manager

Appendix F.7: NHS Highland R and D Approval

Professor Angus Watson
Research & Development Director
NHS Highland Research, Development & Innovati
Dept,
Centre for Health Science
Old Perth Road
Inverness
IV2 3JH

Tel: 01463 255822
Fax: 01463 255838
E-mail: angus.watson@nhs.net

NHS Highland

05 February 2016

NHS Highland R&D ID: **1168**
NRSPCC ID: **NRS16/188582**

Dear [illegible]s Bowes,

Management Approval for Non-Commercial Research

I am pleased to tell you that you now have Management Approval for the research project entitled: **'The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life.' [Protocol V1 29/11/15].** I acknowledge that:

- The project is sponsored by University of Edinburgh.
- The project is does not require external funding.
- Research Ethics approval for the project has been obtained from the West of Scotland Research Ethics Committee 4, (Reference Number: 16/WS/0008)
- The project is Site-Specific Assessment exempt

The following conditions apply:

- The responsibility for monitoring and auditing this project lies with the University of Edinburgh.
- This study will be subject to ongoing monitoring for Research Governance purposes and may be audited to ensure compliance with the Research Governance Framework for Health and Community Care in Scotland (2006, 2nd Edition), however prior written notice of audit will be given.

- All amendments (minor or substantial) to the protocol or to the REC application should be copied to the NHS Highland Research and Development Office together with a copy of the corresponding approval letter.
- The paperwork concerning all incidents, adverse events and serious adverse events, thought to be attributable to participant's involvement in this project should be copied to the NHS Highland R&D Office.
- Monthly recruitment rates should be notified to the NHS Highland Research and Development Office, detailing date of recruitment and the participant trial ID number. This should be done by e-mail on the first week of the following month.

Please report the information detailed above, or any other changes in resources used, or staff involved in the project, to the NHS Highland Research and Development Manager, Frances Hines (01463 255822, frances.hines@nhs.net).

Yours sincerely,

Frances Hines
Research and Development Manager

cc Frances Hines, R&D Manager, NHS Highland Research, Development and Innovation Office, The Centre for Health Science, Old Perth Road, Inverness, IV2 3JH

Appendix F.8: NHS Lanarkshire R and D Approval

Miss Margaret Bowes
Trainee Clinical Psychologist
NHS Borders
Mental Health Administration
Huntlyburn House
MELROSE
TD6 9BD

R&D Department
Corporate Services Building
Monklands Hospital
Monkscourt Avenue
AIRDRIE
ML6 0JS

Date 15.06.2016
Enquiries to Elizabeth McGonigal, R&D Facilitator
Direct Line 01236 712459
Email elizabeth.mcgonigal@lanarkshire.scot.nhs.uk

Dear Miss Bowes

Project title: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life

R&D ID: L16002

NRS ID Number: NRS16/188582

Following on from our letter of 10 February 2016 when we issued R&D Management Approval in Principle I am now writing to advise that R&D Management approval has been granted for the conduct of your study within NHS Lanarkshire.

For the study to be carried out you are subject to the following conditions:

Conditions

- You are required to comply with Good Clinical Practice, Ethics Guidelines, Health & Safety Act 1999 and the Data Protection Act 1998.
- The research is carried out in accordance with the Scottish Executive's Research Governance Framework for Health and Community Care (copy available via the Chief Scientist Office website: http://www.cso.scot.nhs.uk/ or the Research & Development Intranet site: http://firstport2/staff-support/research-and-development/default.aspx
- You must ensure that all confidential information is maintained in secure storage. You are further obligated under this agreement to report to the NHS Lanarkshire Data Protection Office and the Research & Development Office infringements, either by accident or otherwise, which constitutes a breach of confidentiality.
-

- Clinical trial agreements (if applicable), or any other agreements in relation to the study, have been signed off by all relevant signatories.
- You must contact the Lead Nation Coordinating Centre if/when the project is subject to any minor or substantial amendments so that these can be appropriately assessed, and approved, where necessary.
- You notify the R&D Department if any additional researchers become involved in the project within NHS Lanarkshire
- You notify the R&D Department when you have completed your research, or if you decide to terminate it prematurely.
- You must send brief annual reports followed by a final report and summary to the R&D office in hard copy and electronic formats as well as any publications.
- If the research involves any investigators who are not employed by NHS Lanarkshire, but who will be dealing with NHS Lanarkshire patients, there may be a requirement for an SCRO check and occupational health assessment. If this is the case then please contact the R&D Department to make arrangements for this to be undertaken and an honorary contract issued.

I trust these conditions are acceptable to you.

Yours sincerely,

Raymond Hamill – Corporate R&D Manager

cc.

NAME	TITLE	CONTACT ADDRESS	ROLE
Mrs Jo-Anne Robertson		Jo-Anne.Robertson@ed.ac.uk	Sponsor Contact
Dr Lucy Abraham	Veterans First Point Scotland Lead Clinical Psychologist	Lucy.Abraham@nhslothian.scot.nhs.uk	Other
Dr Nicola Cogan	Clinical Psychologist	Nicola.Cogan@lanarkshire.scot.nhs.uk	Other

Miss Margaret Bowes
Trainee Clinical Psychologist
NHS Borders
Mental Health Administration
Huntlyburn House
MELROSE TD6 9BD

R&D Department
Corporate Services Building
Monklands Hospital
Monkscourt Avenue
AIRDRIE
ML6 0JS

Date 20th June 2016
Enquiries to Frances Fisher, R&D Facilitator
Direct Line 01236 712460
Email frances.fisher@lanarkshire.scot.nhs.uk

Dear Miss Bowes

Project title: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life

R&D ID: L16002 **Ethics number: 16/WS/0008**

Amendment number: SA 27.4.16 **Ethics approval date: 23.05.2016**

Local PI/Collaborator: N/A **NHSL Site(s): Veterans First Point Service in Lanarkshire**

I am writing to you as Chief Investigator of the above study in reference to the above Amendment as approved in the Ethics Approval letter dated 23rd May 2016. Any documents approved are listed in Table 1, overleaf.

I confirm that your original R&D Management Approval has not been affected by this Amendment, and it can therefore be implemented within NHS Lanarkshire as detailed above, subject to **all** regulatory approvals. NHS Lanarkshire reserves the right to revoke Management Approval should any unfavourable opinions be received.

I note that it is the responsibility of the Principal Investigator(s) to carry out any changes to be made to the project as a result.

Yours sincerely,

Raymond Hamill – Corporate R&D Manager
cc. – see overleaf

PLEASE NOTE: It is the responsibility of the Principal Investigator to inform the R&D Department of any significant findings identified as a result of a Monitoring Visit.

Table 1

The following documents were approved as part of the amendment:

Document	*Version*	*Date*
Covering letter on headed paper		27 April 2016
Non-validated questionnaire [Demographic Information Questionnaire]	3	01 April 2016
Notice of Substantial Amendment (non-CTIMP)	Substantial amendment 1 - 1/4/2016 (REC Ref AM02)	27 April 2016
Other [Response to Questions]		13 May 2016
Participant information sheet (PIS) [Scottish Prison Service Version]	1	01 April 2016
Research protocol or project proposal	2	01 April 2016

C.C.

NAME	TITLE	CONTACT ADDRESS	ROLE
Mrs Jo-Anne Robertson		Jo-Anne.Robertson@ed.ac.uk	Sponsor Contact
Dr Lucy Abraham	Veterans First Point Scotland Lead Clinical Psychologist	Lucy.Abraham@nhslothian.scot.nhs.uk	Other
Dr Nicola Cogan	Clinical Psychologist	Nicola.Cogan@lanarkshire.scot.nhs.uk	Other

Appendix F.9: NHS Lothian R and D Approval

University Hospitals Division

NHS Lothian

Queen's Medical Research Institute
47 Little France Crescent, Edinburgh, EH16 4TJ

FM/MT/approval

27 January 2016

Research & Development
Room E1.12
Tel: 0131 242 3330

Email:
R&DOffice@nhslothian.scot.nhs.uk

Director: Professor David E Newby

Dr Lucy Abraham
NHS Scotland
Consultant Clinical Psychologist
Veterans First Point
Floor K, Argyle House, 3 Lady Lawson Street
Edinburgh
EH3 9DR

Dear Dr Abraham

Lothian R&D Project No: 2016/0032

Title of Research: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life.

REC No: 16/WS/0008

Participant Information Sheet:
Version 2 dated 20 January 2016

Consent Form:
N/A

Protocol: Version 1 dated 29 November 2015

I am pleased to inform you that this study has been approved for NHS Lothian and you may proceed with your research, subject to the conditions below. This letter provides Site Specific approval for NHS Lothian.

Please note that the NHS Lothian R&D Office must be informed if there are any changes to the study such as amendments to the protocol, recruitment, funding, personnel or resource input required of NHS Lothian.

Substantial amendments to the protocol will require approval from the ethics committee which approved your study and the MHRA where applicable.

Please inform this office when recruitment has closed and when the study has been completed.

I wish you every success with your study.

Yours sincerely
Fiona McArdle.

Ms Fiona McArdle
Deputy R&D Director

cc. Miss Margaret Bowes, Chief Investigator

University Hospitals Division

NHS Lothian

Queen's Medical Research Institute
47 Little France Crescent, Edinburgh, EH16 4TJ

RESEARCH & DEVELOPMENT
Room E1.12
Tel: 0131 242 3330
Email:
R&DOffice@nhslothian.scot.nhs.uk

Director:
Professor David E Newby

KS/CK

27 June 2016

Dr Lucy Abraham
NHS Scotland
Consultant Clinical Psychologist
Veterans First Point
Floor K, Argyle House, 3 Lady Lawson Street
Edinburgh
EH3 9DR

Dear Dr Abraham

REC No:	16/WS/0008
R&D Project ID No:	2016/0032
Amendment:	Substantial amendment dated 27 April 2016
Title of Research	The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life.

I am writing in reply to recent correspondence in relation to an amendment(s) to the above project and the subsequent updated documents as follows.

- Non Validated Questionnaire- (Demographic information) Version 3.0, dated 1 April 2016
- Participant Information Sheet (Scottish Prison Service Version) Version 1.0, dated 1 April 2016
- Research Protocol Version 2.0, dated 1 April 2016

We have now assessed any consequential changes and can confirm that NHS Lothian management approval is extended to cover the specific changes intimated.

Yours sincerely

Mr Kenny Scott
NRS Generic Review Manager

cc: Mrs Margaret Bowes, Psychological Services, NHS Borders

NHS BORDERS

www.nhsborders.org.uk

Lothian R&D Office
Research and Development
Room E1.12, Queen's Medical Research Institute
Edinburgh Royal Infirmary
47 Little France Crescent
Edinburgh
EH16 4TJ

Date 11 March 2016

Enquiries to Stasys Gimbutis, HR Officer
Direct Line 01896 826 156
E-mail stasysgimbutis@borders.scot.nhs.uk

NHS to NHS letter of access: proforma confirmation of pre-engagement checks

Researcher's name: **Margaret Bowes**

Job title: Trainee Clinical Psychologist

Contract end date: 30/04/2017

Workplace and postal address: Andrew Lang Unit, Selkirk

Payroll number: B9888188

As the representative of the NHS employer of the above-named person, I can confirm that s/he is employed by this organisation. I understand that the responsibility for ensuring that the appropriate pre-engagement checks have been undertaken rests with us as the individual's substantive employer. I can confirm that the appropriate pre-engagement checks have been completed, commensurate with her/his job description and proposed research role in your NHS organisation, and in line with NHS employment checks standards.

Name of employer's representative: Stasys Gimbutis

Job Title: HR Officer

Workplace address:
HR Department
1st Floor Primary Services Block
Borders General Hospital
Melrose
Roxburghshire
TD6 9BS

Appendix F.10: NHS Tayside R and D Approval

NHS Tayside

09 February 2016

Miss Margaret Bowes
NHS Borders
Psychological Services
Mental Health Administration
Huntlyburn House
MELROSE
TD6 9BD

Dear Miss Bowes,

R&D MANAGEMENT APPROVAL – TAYSIDE

Title: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life.

Chief Investigator: Miss Margaret Bowes

Principal Investigator/Local Collaborator: Dr Lucy Abraham

Tayside Ref: 2016MH **NRS Ref: NRS16/188582**

REC Ref: 16/WS/0008

Sponsor: University of Edinburgh

Funder: Student Project - Unfunded

Many thanks for your application to carry out the above project here in NHS Tayside. I am pleased to confirm that the project documentation (as outlined below) has been reviewed, registered and Management Approval has been granted for the study to proceed locally in Tayside.

Approval is granted on the following conditions:-

- ALL Research must be carried out in compliance with the Research Governance Framework for Health & Community Care, Health & Safety Regulations, data protection principles, statutory legislation and in accordance with Good Clinical Practice (GCP).
- All amendments to be notified to TASC R&D Office via the correct amendment pathway. Either direct to the R&D Office or via the Lead Co-ordinating Centre depending on how the study is set up (http://www.hra.nhs.uk/nhshsc-rd-uk-process-management-amendments/).
- All local researchers must hold either a Substantive Contract, Honorary Research Contract, Honorary Clinical Contract or Letter of Access with NHS Tayside where required (http://www.nihr.ac.uk/policy-and-standards/research-passports.htm).
- TASC R&D Office to be informed of change in Principal Investigator, Chief Investigator or any additional research personnel locally.
- Notification to TASC R&D Office of any change in funding.

- As custodian of the information collated during this research project you are responsible for ensuring the security of all personal information collected in line with NHS Scotland IT Security Policies, until destruction of this data.

- All eligible and adopted studies will be added to the UKCRN Portfolio database http://public.ukcrn.org.uk/. Recruitment figures for eligible and adopted studies must be recorded onto the Portfolio every month. This is the responsibility of the lead UK site. If you are the lead, or only UK site, we can provide help or advice with this. For information, contact Sarah Kennedy (01382 383882 or sarah.kennedy17@nhs.net) or Margaret Marshall (01382 383091 or margaret.marshall7@nhs.net).

- Annual reports are required to be submitted to TASC R&D Office with the first report due 12 months from date of issue of this management approval letter and at yearly intervals until completion of the study.

- Notification of early termination within 15 days or End of Trial within 90 days followed by End of Trial Report within 1 year to TASC R&D Office.

- You may be required to assist with and provide information in regard to audit and monitoring of study.

Please note you are required to adhere to the conditions, if not, NHS management approval may be withdrawn for the study.

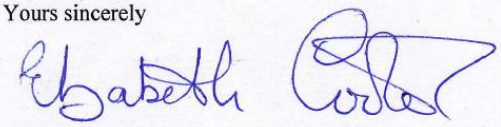
Approved Documents

Document	Version	Date
Copies of Advertisement materials (Poster 1)	**2**	**20/01/2016**
Copies of Advertisement materials (Poster 2)	**2**	**20/01/2016**
Evidence of Sponsor Insurance		
Letters of invitation (Email invitation to participate in study)	**1**	**15/12/2015**
Letters of invitation (Social Media invitation)	**1**	**14/12/2015**
Non-validated questionnaire (use of Mental Health Services)	**1**	**15/12/2015**
Non-validated questionnaire (Attitude and intention to seek treatment)	**1**	**15/12/2015**
Non-validated questionnaire (Demographic info)	**2**	**20/01/2016**
Research Protocol	**1**	**29/11/2015**
Summary CV for Chief Investigator	**1**	
Summary CV for Academic Supervisor		

May I take this opportunity to wish you every success with your project.

Please do not hesitate to contact TASC R&D Office should you require further assistance.

Yours sincerely



Elizabeth Coote
Head of Non-Commercial Research Services

TAyside medical **S**cience **C**entre (TASC)
Ninewells Hospital & Medical School
TASC Research & Development Office
Residency Block, Level 3
George Pirie Way
Dundee DD1 9SY
Email: liz.coote@nhs.net
Tel: 01382 383876 Fax: 01382 740122

c.c. Dr Lucy Abraham
Margaret Marshall
TASC Feasibility Team

NHS
Tayside

16 June 2016

Miss Margaret Bowes
Trainee Clinical Psychologist
NHS Borders
Psychological Services
Mental Health Administration
Huntlyburn House
Melrose
UK
TD6 9BD

Dear Miss Bowes,

ACCEPTANCE OF AMENDMENT LETTER

Title: The Influence of Psychosocial Factors in Veteran Adjustment to Civilian Life.

Chief Investigator: Miss Margaret Bowes

Principal Investigator/Local Collaborator: N/A

Tayside Ref: 2016MH01 **NRS Ref: NRS16/188582**

REC Ref: 16/WS/0008

Amendment Number: Substantial amendment 1 – 1/4/2016 (REC Ref AM02)

Amendment Date: 27 April 2016

The above amendment has been submitted to and reviewed by the Lead Co-ordinating Centre. This amendment has been categorised as **CATEGORY A** and the 35 day implementation ~~date is~~ **11/07/16**.

Following my assessment of the proposed changes I am pleased to confirm that NHS Tayside has no objection to these being implemented locally.

Approved Documents

Document	Version	Date
Covering letter on headed paper		**27 April 2016**
Non-validated questionnaire [Demographic Information Questionnaire]		
Notice of Substantial Amendment (non-CTIMP)	**Substantial amendment 1 –**	**27 April 2016**

Version 2.0 dated 06/01/15
NRS Study Amendment Approval Following Categorisation (Ethical-Regulatory Approvals in Place)

	1/4/2016 (REC Ref AM02)	
Other [Response to Questions]		**13 May 2016**
Participant information sheet (PIS) [Scottish Prison Service Version]	**1**	**01 April 2016**
Research protocol or project proposal .	**2**	**01 April 2016**

Yours Sincerely

Elizabeth Coote
Head of Non-Commercial Research Services

TAyside medical Science Centre (TASC)
Ninewells Hospital & Medical School
TASC Research & Development Office
Residency Block, Level 3
George Pirie Way
Dundee DD1 9SY
Email: liz.coote@nhs.net
Tel: 01382 383876 Fax: 013812 740122

Appendix G: Additional Demographic Information

Living situation (N = 154)	**n**	**%**
Private let	26	16.9
Supported accommodation	3	1.9
Homeless accommodation	1	.6
Privately owned	79	51.3
Council house/housing association	33	21.4
Mobile home	1	.6
With relatives	4	2.6
HMP	7	4.5

Benefits (N = 152)		
Employment Support Allowance	19	10.2
Disability Living Allowance	22	11.8
Winter Fuel Allowance	6	3.2
Working Family Tax Credit	8	4.3
Child Tax Credit	11	5.9
Pension Credits	2	1.1
Housing / council tax benefits	10	5.4
Incapacity	3	1.6
None	100	53.8
Suspended (prison or hospital)	5	2.7

Pension (N = 154)		
Not applied for	9	5.8
Not entitled as yet	37	24.0
War	19	12.3
Armed Forces pension scheme	58	37.7
Medical	25	16.2
Service	5	3.2
Application in progress	1	0.6

Tours (N = 131)		
Northern Ireland	40	16.9
Iraq	77	32.5
Afghanistan	57	24.1
Falklands	3	1.3
Germany	2	0.8
Bosnia	22	9.3
Kosovo	14	5.9
Macedonia	1	0.4
Balkans	2	0.8
Yemen	1	0.4
Oman	1	0.4
Gulf 1	10	4.2
Would rather not say	1	0.4
"Between the gulf wars"	1	0.4
"Operational deployments east"	1	0.4
Cyprus	4	1.7
Missing	23	

Number of tours (N = 153)
Mode = 1 and 2 tours

Minimum = 0		
Maximum = 10		
Missing = 1		
0	24	15.7
1	43	28.1
2	43	28.1
3	25	16.3
4	9	5.9
5	3	2.0
6	3	2.0
7	1	.7
8	1	.7
10	1	.7

Length of time served in the Armed Forces (N = 154)

0-4 years	9	5.8
5-10 years	40	26.0
11-15 years	27	17.5
16-20 years	17	11.0
21-25 years	44	28.6
26-30 years	8	5.2
31-40 years	8	5.2
> 40 years	1	.6
Mode = 21 – 25 years		
Minimum = 0 - 4 years		
Maximum = > 40 years		

Year left the military (N = 153)

2001	11	7.2
2002	4	2.6
2003	6	3.9
2004	3	2.0
2005	8	5.2
2006	7	4.6
2007	13	8.5
2008	9	5.9
2009	2	1.3
2010	13	8.5
2011	14	9.2
2012	13	8.5
2013	15	9.8
2014	14	9.2
2015	11	7.2
2016	10	6.5
Mode = 2013		

Reason for leaving the Armed Forces (N = 153)

Normal Service Leaver: Completion of engagement	65	42.5
Normal Service Leaver: You were given notice to leave	3	2.0
Normal Service Leaver: You were made redundant	4	2.6
Early Service Leaver: You completed less than 4 years of service and requested to leave	2	1.3
Medical discharge: Physical health reasons	18	11.8
Medical discharge: Mental health reasons	10	6.5
Medical discharge: Both physical and mental health reasons	14	9.2
Dismissal	6	3.9
Other	30	19.6

Missing	1	
Other (N = 30):		
Reserves so not left	1	.6
Premature Voluntary Relapse	3	1.9
Resigned/requested to leave	16	10.4
Family/carer reasons	6	3.9
Compassionate discharge	1	.6
Career fouled	1	.6
Missing	3	

Appendix H: Pearson's and Spearman's Rho Correlations for the outcome variables with 95% bias corrected and accelerated confidence intervals. Confidence intervals based on 1000 bootstrap intervals

Pearson's Correlations:

			M2C-Q	EUROHIS-QoL	CORE-10	SSRPH	ISMI - Alienation	ISMI - Stereotype endorsement	ISMI - Discrimination experience	ISMI - Social withdrawal	ISMI - Stigma resistance	Attitude toward seeking help	Likelihood of seeking help	AAQ-II	Reappraisal	Suppression	Gender	Dependents?	Stability of living situation	Benefits status	Regulars or Reserves	Combat or support role	Served in conflicts between 2001 and 2016	Current mental health issues (self-report)	Current prescribed medication for mental health	Current help from a mental health professional	Previous mental health issues	Previous prescription for mental health issues	Previous help for mental health problems	Not Officer or Officer
CORE-10	Pearson Correlation		.828**	-.789**	1	.515**	.685**	.631**	.596**	.649**	.512**	-.292**	-.293**	.830**	-.146	.384**	-.070	.072	.190*	.409**	.022	-.259**	.018	-.678**	-.448**	-.393**	-.076	-.170*	.114	-.289**
	BCa 95% Confidence Interval	Lower	.775	-.846	.	.396	.580	.527	.473	.539	.345	-.421	-.435	.782	-.319	.216	-.231	-.105	-.002	.247	-.186	-.409	-.162	-.772	-.579	-.519	-.239	-.322	-.059	-.438
		Upper	.874	-.722	.	.617	.779	.731	.708	.755	.657	-.155	-.150	.870	.015	.537	.094	.256	.353	.567	.201	-.087	.206	-.575	-.308	-.239	.079	-.021	.286	-.123
SSRPH	Pearson Correlation		.450**	-.414**	.515**	1	.400**	.431**	.362**	.365**	.277**	-.332**	-.388**	.557**	.029	.393**	-.170*	.067	.121	.068	.216*	-.162	-.130	-.331**	-.238**	-.159	.084	.032	.079	-.077
	BCa 95% Confidence Interval	Lower	.314	-.540	.396	.	.253	.287	.204	.207	.081	-.488	-.519	.434	-.142	.233	-.344	-.095	-.093	-.105	.058	-.314	-.309	-.475	-.381	-.317	-.079	-.133	-.093	-.238
		Upper	.574	-.290	.617	.	.529	.562	.494	.503	.448	-.162	-.234	.651	.204	.540	.009	.219	.298	.239	.354	.007	.047	-.173	-.092	.007	.255	.200	.268	.081
ISMI - Alienation	Pearson Correlation		.703**	-.583**	.685**	.400**	1	.855**	.830**	.902**	.596**	-.100	-.100	.743**	-.107	.189*	-.001	-.061	.162	.341**	-.010	-.233**	-.043	-.779**	-.618**	-.449**	-.270**	-.268**	.102	-.272**
	BCa 95% Confidence Interval	Lower	.626	-.680	.580	.253	.	.804	.745	.860	.453	-.271	-.270	.658	-.280	.024	-.151	-.240	-.015	.183	-.205	-.406	-.210	-.845	-.705	-.563	-.423	-.415	-.063	-.404
		Upper	.775	-.466	.779	.529	.	.894	.901	.935	.711	.074	.075	.812	.065	.351	.155	.123	.311	.478	.168	-.066	.127	-.708	-.526	-.334	-.124	-.124	.276	-.121

ISMI - Stereotype endorsement	Pearson Correlation		.682**	-.603**	.631**	.431**	.855**	1	.800**	.847**	.612**	-.188*	-.192*	.718**	-.167	.165	-.013	-.073	.146	.368**	.010	-.257**	-.038	-.694**	-.514**	-.377**	-.229**	-.270**	.187*	-.270**
	BCa 95% Confidence Interval	Lower	.573	-.696	.527	.287	.804	.	.697	.790	.476	-.364	-.360	.627	-.323	-.011	-.146	-.247	-.020	.232	-.196	-.417	-.201	-.778	-.640	-.515	-.392	-.422	.016	-.401
		Upper	.771	-.486	.731	.562	.894	.	.882	.894	.733	.007	-.019	.798	-.009	.362	.126	.105	.300	.497	.203	-.090	.126	-.596	-.393	-.246	-.077	-.119	.352	-.117
ISMI - Discrimination experience	Pearson Correlation		.639**	-.563**	.596**	.362**	.830**	.800**	1	.864**	.598**	-.121	-.054	.668**	-.184*	.137	-.008	-.063	.106	.356**	.086	-.214*	.012	-.686**	-.524**	-.422**	-.265**	-.304**	.097	-.222**
	BCa 95% Confidence Interval	Lower	.525	-.660	.473	.204	.745	.697	.	.804	.469	-.283	-.215	.563	-.341	-.040	-.171	-.235	-.043	.208	-.123	-.386	-.142	-.773	-.636	-.536	-.434	-.451	-.068	-.356
		Upper	.731	-.446	.708	.494	.901	.882	.	.915	.717	.077	.135	.768	-.024	.316	.155	.110	.251	.485	.272	-.036	.171	-.588	-.406	-.297	-.098	-.152	.273	-.076
ISMI - Social withdrawal	Pearson Correlation		.673**	-.568**	.649**	.365**	.902**	.847**	.864**	1	.594**	-.096	-.117	.713**	-.110	.222**	.031	-.042	.104	.369**	-.008	-.185*	-.004	-.727**	-.555**	-.418**	-.277**	-.321**	.155	-.264**
	BCa 95% Confidence Interval	Lower	.572	-.681	.539	.207	.860	.790	.804	.	.462	-.264	-.282	.612	-.286	.051	-.129	-.220	-.052	.206	-.209	-.371	-.177	-.803	-.659	-.539	-.431	-.455	-.015	-.413
		Upper	.764	-.443	.755	.503	.935	.894	.915	.	.715	.069	.064	.794	.069	.385	.198	.135	.250	.504	.176	-.006	.172	-.646	-.445	-.301	-.128	-.179	.316	-.114
ISMI - Stigma resistance	Pearson Correlation		.503**	-.458**	.512**	.277**	.596**	.612**	.598**	.594**	1	-.166	-.196*	.450**	-.359**	-.045	-.040	-.052	.097	.360**	.011	-.222**	.132	-.511**	-.317**	-.297**	-.107	-.179*	.032	-.236**
	BCa 95% Confidence Interval	Lower	.352	-.615	.345	.081	.453	.476	.469	.462	.	-.337	-.355	.271	-.513	-.248	-.208	-.208	-.101	.199	-.151	-.394	-.030	-.652	-.454	-.441	-.276	-.327	-.123	-.399
		Upper	.638	-.282	.657	.448	.711	.733	.717	.715	.	.013	-.036	.613	-.202	.173	.131	.113	.280	.511	.179	-.043	.300	-.347	-.166	-.142	.058	-.031	.205	-.056
Attitude toward seeking help	Pearson Correlation		-.285**	.304**	-.292**	-.332**	-.100	-.188*	-.121	-.096	-.166	1	.722**	-.299**	.196*	-.190*	-.020	-.107	-.242**	-.119	.094	.118	-.042	-.034	-.026	-.093	-.103	-.017	-.009	.045
	BCa 95% Confidence Interval	Lower	-.446	.140	-.421	-.488	-.271	-.364	-.283	-.264	-.337	.	.596	-.430	.035	-.341	-.218	-.268	-.419	-.277	-.093	-.057	-.195	-.203	-.186	-.244	-.263	-.167	-.177	-.109
		Upper	-.117	.441	-.155	-.162	.074	.007	.077	.069	.013	.	.821	-.150	.348	-.013	.150	.058	-.060	.038	.270	.301	.114	.142	.152	.090	.071	.145	.169	.207
Likelihood of seeking help	Pearson Correlation		-.271**	.204*	-.293**	-.388**	-.100	-.192*	-.054	-.117	-.196*	.722**	1	-.284**	.173*	-.167	-.021	-.154	-.088	-.120	.142	.102	.060	.017	-.079	-.264**	-.036	-.024	-.031	.173*
	BCa 95% Confidence Interval	Lower	-.417	.044	-.435	-.519	-.270	-.360	-.215	-.282	-.355	.596	.	-.429	.001	-.334	-.191	-.312	-.316	-.280	-.004	-.078	-.082	-.143	-.232	-.377	-.216	-.192	-.195	.001
		Upper	-.115	.364	-.150	-.234	.075	-.019	.135	.064	-.036	.821	.	-.110	.343	.011	.128	.002	.119	.046	.268	.278	.196	.172	.079	-.135	.132	.145	.129	.344
AAQ-II	Pearson Correlation		.820**	-.725**	.830**	.557**	.743**	.718**	.668**	.713**	.450**	-.299**	-.284**	1	-.098	.397**	-.090	-.034	.191*	.369**	-.063	-.275**	-.074	-.714**	-.541**	-.427**	-.154	-.260**	.175*	-.218*
	BCa 95% Confidence Interval	Lower	.765	-.794	.782	.434	.658	.627	.563	.612	.271	-.430	-.429	.	-.282	.216	-.237	-.202	.007	.200	-.284	-.428	-.244	-.789	-.649	-.545	-.315	-.407	.006	-.356
		Upper	.868	-.651	.870	.651	.812	.798	.768	.794	.613	-.150	-.110	.	.087	.557	.066	.143	.362	.520	.142	-.112	.111	-.642	-.428	-.297	.004	-.112	.350	-.075
Reappraisal	Pearson Correlation		-.203*	.210*	-.146	.029	-.107	-.167	-.184*	-.110	-.359**	.196*	.173*	-.098	1	.319**	-.115	-.067	-.095	-.306**	.123	-.040	-.085	.058	.042	.157	-.095	.023	-.056	.138
	BCa 95% Confidence Interval	Lower	-.364	.042	-.319	-.142	-.280	-.323	-.341	-.286	-.513	.035	.001	-.282	.	.139	-.294	-.238	-.313	-.458	.006	-.198	-.268	-.104	-.128	-.010	-.250	-.142	-.229	-.014
		Upper	-.040	.379	.015	.204	.065	-.009	-.024	.069	-.202	.348	.343	.087	.	.483	.075	.112	.114	-.146	.246	.124	.096	.221	.215	.321	.067	.196	.125	.292

Suppression	Pearson Correlation		.358**	-.317**	.384**	.393**	.189*	.165	.137	.222**	-.045	-.190*	-.167	.397**	.319**	1	-.147	.021	.030	.118	.046	-.116	-.031	-.250**	-.144	-.091	-.040	-.001	.051	-.086
	BCa 95% Confidence Interval	Lower	.187	-.478	.216	.233	.024	-.011	-.040	.051	-.248	-.341	-.334	.216	.139	.	-.293	-.148	-.189	-.059	-.143	-.281	-.196	-.406	-.293	-.247	-.202	-.171	-.123	-.223
		Upper	.509	-.156	.537	.540	.351	.362	.316	.385	.173	-.013	.011	.557	.483	.	-.001	.183	.222	.265	.228	.059	.131	-.084	.009	.053	.118	.170	.231	.063
Gender	Pearson Correlation		-.092	.140	-.070	-.170*	-.001	-.013	-.008	.031	-.040	-.020	-.021	-.090	-.115	-.147	1	.122	-.013	-.125	-.071	.304**	.073	.038	-.012	.053	-.129	-.121	-.109	.088
	BCa 95% Confidence Interval	Lower	-.267	-.032	-.231	-.344	-.151	-.146	-.171	-.129	-.208	-.218	-.191	-.237	-.294	-.293	.	-.032	-.146	-.260	-.161	.168	-.090	-.131	-.176	-.127	-.288	-.310	-.265	-.055
		Upper	.085	.292	.094	.009	.155	.126	.155	.198	.131	.150	.128	.066	.075	-.001	.	.298	.164	.043	.073	.429	.270	.211	.150	.208	.052	.074	.057	.209
Dependents	Pearson Correlation		-.046	.023	.072	.067	-.061	-.073	-.063	-.042	-.052	-.107	-.154	-.034	-.067	.021	.122	1	-.178*	-.039	-.065	-.030	.034	.023	.056	-.005	.047	.015	-.139	.126
	BCa 95% Confidence Interval	Lower	-.225	-.149	-.105	-.095	-.240	-.247	-.235	-.220	-.208	-.268	-.312	-.202	-.238	-.148	-.032	.	-.317	-.219	-.215	-.197	-.132	-.129	-.104	-.160	-.121	-.155	-.302	-.021
		Upper	.145	.181	.256	.219	.123	.105	.110	.135	.113	.058	.002	.143	.112	.183	.298	.	-.001	.139	.100	.128	.207	.173	.212	.156	.221	.177	.028	.272
Stability of living situation	Pearson Correlation		.165	-.264**	.190*	.121	.162	.146	.106	.104	.097	-.242**	-.088	.191*	-.095	.030	-.013	-.178*	1	.239**	-.118	-.140	.034	-.073	-.048	-.116	.032	-.065	.120	-.137
	BCa 95% Confidence Interval	Lower	.006	-.405	-.002	-.093	-.015	-.020	-.043	-.052	-.101	-.419	-.316	.007	-.313	-.189	-.146	-.317	.	.055	-.168	-.287	-.128	-.227	-.230	-.294	-.153	-.263	-.041	-.364
		Upper	.302	-.107	.353	.298	.311	.300	.251	.250	.280	-.060	.119	.362	.114	.222	.164	-.001	.	.415	-.074	.031	.212	.102	.138	.077	.193	.116	.273	.075
Benefits status	Pearson Correlation		.453**	-.486**	.409**	.068	.341**	.368**	.356**	.369**	.360**	-.119	-.120	.369**	-.306**	.118	-.125	-.039	.239**	1	.010	-.217*	.050	-.297**	-.268**	-.317**	-.095	-.207*	.148	-.335**
	BCa 95% Confidence Interval	Lower	.308	-.600	.247	-.105	.183	.232	.208	.206	.199	-.277	-.280	.200	-.458	-.059	-.260	-.219	.055	.	-.158	-.376	-.114	-.467	-.453	-.489	-.258	-.391	-.021	-.487
		Upper	.585	-.353	.567	.239	.478	.497	.485	.504	.511	.038	.046	.520	-.146	.265	.043	.139	.415	.	.181	-.036	.204	-.131	-.094	-.137	.077	-.032	.306	-.159
Regulars or Reserves	Pearson Correlation		-.043	.069	.022	.216*	-.010	.010	.086	-.008	.011	.094	.142	-.063	.123	.046	-.071	-.065	-.118	.010	1	.074	-.067	.046	.087	-.023	.157	.124	.047	.035
	BCa 95% Confidence Interval	Lower	-.244	-.148	-.186	.058	-.205	-.196	-.123	-.209	-.151	-.093	-.004	-.284	.006	-.143	-.161	-.215	-.168	-.158	.	-.092	-.180	-.123	-.092	-.216	-.018	-.039	-.111	-.156
		Upper	.135	.315	.201	.354	.168	.203	.272	.176	.179	.270	.268	.142	.246	.228	.073	.100	-.074	.181	.	.236	.078	.227	.228	.157	.287	.248	.211	.178
Combat or support role	Pearson Correlation		-.281**	.232**	-.259**	-.162	-.233**	-.257**	-.214*	-.185*	-.222**	.118	.102	-.275**	-.040	-.116	.304**	-.030	-.140	-.217*	.074	1	.157	.241**	.140	.122	-.073	-.160	-.161	.088
	BCa 95% Confidence Interval	Lower	-.434	.056	-.409	-.314	-.406	-.417	-.386	-.371	-.394	-.057	-.078	-.428	-.198	-.281	.168	-.197	-.287	-.376	-.092	.	-.016	.073	-.038	-.046	-.241	-.329	-.328	-.093
		Upper	-.112	.379	-.087	.007	-.066	-.090	-.036	-.006	-.043	.301	.278	-.112	.124	.059	.429	.128	.031	-.036	.236	.	.319	.402	.302	.293	.083	.008	-.002	.264
Served in conflicts between 2001 and 2016	Pearson Correlation		-.064	.025	.018	-.130	-.043	-.038	.012	-.004	.132	-.042	.060	-.074	-.085	-.031	.073	.034	.034	.050	-.067	.157	1	.013	-.059	.037	-.112	-.161	-.012	-.061
	BCa 95% Confidence Interval	Lower	-.249	-.158	-.162	-.309	-.210	-.201	-.142	-.177	-.030	-.195	-.082	-.244	-.268	-.196	-.090	-.132	-.128	-.114	-.180	-.016	.	-.158	-.235	-.129	-.272	-.344	-.175	-.242
		Upper	.114	.207	.206	.047	.127	.126	.171	.172	.300	.114	.196	.111	.096	.131	.270	.207	.212	.204	.078	.319	.	.184	.120	.209	.059	.015	.167	.126

Current mental health issues (self-report)	Pearson Correlation		-.652**	.534**	-.678**	-.331**	-.779**	-.694**	-.686**	-.727**	-.511**	-.034	.017	-.714**	.058	-.250**	.038	.023	-.073	-.297**	.046	.241**	.013	1	.654**	.523**	.197*	.304**	-.198*	.287**
	BCa 95% Confidence Interval	Lower	-.748	.422	-.772	-.475	-.845	-.778	-.773	-.803	-.652	-.203	-.143	-.789	-.104	-.406	-.131	-.129	-.227	-.467	-.123	.073	-.158	.	.536	.397	.031	.141	-.355	.127
		Upper	-.536	.642	-.575	-.173	-.708	-.596	-.588	-.646	-.347	.142	.172	-.642	.221	-.084	.211	.173	.102	-.131	.227	.402	.184	.	.756	.644	.368	.474	-.049	.426
Current prescription for mental health issues	Pearson Correlation		-.489**	.410**	-.448**	-.238**	-.618**	-.514**	-.524**	-.555**	-.317**	-.026	-.079	-.541**	.042	-.144	-.012	.056	-.048	-.268**	.087	.140	-.059	.654**	1	.540**	.109	.252**	-.193*	.064
	BCa 95% Confidence Interval	Lower	-.618	.267	-.579	-.381	-.705	-.640	-.636	-.659	-.454	-.186	-.232	-.649	-.128	-.293	-.176	-.104	-.230	-.453	-.092	-.038	-.235	.536	.	.385	-.060	.072	-.347	-.104
		Upper	-.348	.538	-.308	-.092	-.526	-.393	-.406	-.445	-.166	.152	.079	-.428	.215	.009	.150	.212	.138	-.094	.228	.302	.120	.756	.	.684	.283	.430	-.042	.234
Current help from a mental health professional	Pearson Correlation		-.383**	.396**	-.393**	-.159	-.449**	-.377**	-.422**	-.418**	-.297**	-.093	-.264**	-.427**	.157	-.091	.053	-.005	-.116	-.317**	-.023	.122	.037	.523**	.540**	1	-.154	-.036	-.031	.157
	BCa 95% Confidence Interval	Lower	-.519	.249	-.519	-.317	-.563	-.515	-.536	-.539	-.441	-.244	-.377	-.545	-.010	-.247	-.127	-.160	-.294	-.489	-.216	-.046	-.129	.397	.385	.	-.313	-.207	-.194	-.010
		Upper	-.230	.516	-.239	.007	-.334	-.246	-.297	-.301	-.142	.090	-.135	-.297	.321	.053	.208	.156	.077	-.137	.157	.293	.209	.644	.684	.	.015	.142	.128	.324
Previous mental health issues	Pearson Correlation		-.115	.116	-.076	.084	-.270**	-.229**	-.265**	-.277**	-.107	-.103	-.036	-.154	-.095	-.040	-.129	.047	.032	-.095	.157	-.073	-.112	.197*	.109	-.154	1	.755**	-.140	-.043
	BCa 95% Confidence Interval	Lower	-.278	-.055	-.239	-.079	-.423	-.392	-.434	-.431	-.276	-.263	-.216	-.315	-.250	-.202	-.288	-.121	-.153	-.258	-.018	-.241	-.272	.031	-.060	-.313	.	.657	-.309	-.226
		Upper	.044	.288	.079	.255	-.124	-.077	-.098	-.128	.058	.071	.132	.004	.067	.118	.052	.221	.193	.077	.287	.083	.059	.368	.283	.015	.	.837	.027	.131
Previous prescription for mental health issues	Pearson Correlation		-.186*	.248**	-.170*	.032	-.268**	-.270**	-.304**	-.321**	-.179*	-.017	-.024	-.260**	.023	-.001	-.121	.015	-.065	-.207*	.124	-.160	-.161	.304**	.252**	-.036	.755**	1	-.174*	-.034
	BCa 95% Confidence Interval	Lower	-.341	.095	-.322	-.133	-.415	-.422	-.451	-.455	-.327	-.167	-.192	-.407	-.142	-.171	-.310	-.155	-.263	-.391	-.039	-.329	-.344	.141	.072	-.207	.657	.	-.338	-.192
		Upper	-.028	.404	-.021	.200	-.124	-.119	-.152	-.179	-.031	.145	.145	-.112	.196	.170	.074	.177	.116	-.032	.248	.008	.015	.474	.430	.142	.837	.	-.020	.132
Previous help for mental health problems	Pearson Correlation		.159	-.090	.114	.079	.102	.187*	.097	.155	.032	-.009	-.031	.175*	-.056	.051	-.109	-.139	.120	.148	.047	-.161	-.012	-.198*	-.193*	-.031	-.140	-.174*	1	-.047
	BCa 95% Confidence Interval	Lower	-.013	-.260	-.059	-.093	-.063	.016	-.068	-.015	-.123	-.177	-.195	.006	-.229	-.123	-.265	-.302	-.041	-.021	-.111	-.328	-.175	-.355	-.347	-.194	-.309	-.338	.	-.232
		Upper	.325	.078	.286	.268	.276	.352	.273	.316	.205	.169	.129	.350	.125	.231	.057	.028	.273	.306	.211	-.002	.167	-.049	-.042	.128	.027	-.020	.	.124
Not Officer or Officer	Pearson Correlation		-.305**	.244**	-.289**	-.077	-.272**	-.270**	-.222**	-.264**	-.236**	.045	.173*	-.218*	.138	-.086	.088	.126	-.137	-.335**	.035	.088	-.061	.287**	.064	.157	-.043	-.034	-.047	1
	BCa 95% Confidence Interval	Lower	-.453	.072	-.438	-.238	-.404	-.401	-.356	-.413	-.399	-.109	.001	-.356	-.014	-.223	-.055	-.021	-.364	-.487	-.156	-.093	-.242	.127	-.104	-.010	-.226	-.192	-.232	.
		Upper	-.132	.382	-.123	.081	-.121	-.117	-.076	-.114	-.056	.207	.344	-.075	.292	.063	.209	.272	.075	-.159	.178	.264	.126	.426	.234	.324	.131	.132	.124	.

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). c. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples. N = 137

Spearman's Rho Correlations:

			M2C-Q	EUROHIS-QoL	CORE-10	SSRPH	ISMI - Alienation	ISMI - Stereotype endorsement	ISMI -Discrimination experience	ISMI - Social withdrawal	ISMI - Stigma resistance	Attitude toward seeking help	Likelihood of seeking help	AAQ-II	Reappraisal	Suppression	Age	Education category	Number of tours	Years served in the military
Age	Correlation Coefficient		-.229**	.146	-.190*	-.124	-.212**	-.225**	-.191*	-.209**	-.149	.054	.123	-.220**	.123	-.024	1.000	.222**	-.053	.634**
	BCa 95% Confidence Interval	Lower	-.375	-.007	-.343	-.286	-.366	-.408	-.355	-.362	-.302	-.117	-.045	-.374	-.041	-.193	.	.049	-.196	.524
		Upper	-.069	.311	-.029	.038	-.050	-.057	-.021	-.049	.016	.217	.282	-.043	.290	.149	.	.369	.115	.726
Education category	Correlation Coefficient		-.107	.142	-.136	-.016	-.037	-.076	-.076	-.120	-.149	.103	.025	-.094	.058	-.038	.222**	1.000	-.075	.160*
	BCa 95% Confidence Interval	Lower	-.275	.002	-.299	-.175	-.197	-.228	-.235	-.277	-.290	-.046	-.125	-.244	-.096	-.195	.049	.	-.225	-.004
		Upper	.065	.279	.023	.150	.127	.088	.089	.052	.012	.239	.167	.048	.224	.120	.369	.	.088	.319
Number of tours	Correlation Coefficient		.224**	-.168*	.124	.139	.117	.168*	.103	.101	.003	-.104	-.027	.221**	.031	.108	-.053	-.075	1.000	.148
	BCa 95% Confidence Interval	Lower	.069	-.324	-.036	-.035	-.024	.010	-.045	-.046	-.162	-.252	-.183	.063	-.143	-.058	-.196	-.225	.	-.032
		Upper	.359	.002	.277	.305	.260	.307	.249	.244	.155	.061	.138	.366	.210	.274	.115	.088	.	.321
Years served in the military	Correlation Coefficient		-.282**	.228**	-.300**	-.163*	-.285**	-.307**	-.259**	-.302**	-.251**	.073	.151	-.243**	.205*	.022	.634**	.160*	.148	1.000
	BCa 95% Confidence Interval	Lower	-.417	.060	-.441	-.307	-.426	-.461	-.400	-.432	-.400	-.094	-.024	-.396	.045	-.122	.524	-.004	-.032	.
		Upper	-.144	.390	-.143	-.021	-.127	-.128	-.099	-.147	-.088	.241	.317	-.079	.354	.169	.726	.319	.321	.

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). c. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples. N = 152.

Appendix I: Author Guidelines for Journal Submission

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